DEPARTMENT OF AGRICULTURE AND TECHNICAL
INSTRUCTION FOR IRELAND.

THE FERTILISERS AND FEEDING STUFFS ACT, 1906; THE WEEDS AND AGRICULTURAL SEEDS (IRELAND) ACT, 1909; THE BEE PEST PREVENTION (IRELAND) ACT, 1908; AND THE DESTRUCTIVE INSECTS AND PESTS ACTS, 1877 AND 1907.

REPORT OF PROCEEDINGS

FOR THE YEAR

1914.

Presented to both Houses of Parliament by Command of His Majesty.

LONDON
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To

His Excellency IVOR CHURCHILL, BARON WIMBORNE, Lord Lieutenant-General and General Governor of Ireland.

MAY IT PLEASE YOUR EXCELLENCY,

I am directed by the Vice-President to submit to Your Excellency the Report of Proceedings under the Fertilisers and Feeding Stuffs Act, 1906, the Weeds and Agricultural Seeds (Ireland) Act, 1909, the Bee Pest Prevention (Ireland) Act, 1908, and the Destructive Insects and Pests Acts, 1877 and 1907, for the year 1914.

I have the honour to remain,

Your Excellency's faithful Servant,

T. P. GILL,
Secretary.

DEPARTMENT OF AGRICULTURE AND
TECHNICAL INSTRUCTION FOR IRELAND,
UPPER MERRION STREET,
DUBLIN, *2nd October*, 1915.

DUBLIN CASTLE,
6th October, 1915.

SIR,

I have to acknowledge the receipt of your letter of the 2nd instant, forwarding for submission to His Excellency the Lord Lieutenant, the Report of Proceedings for the Year 1914 under the Fertilisers and Feeding Stuffs Act, 1906; the Weeds and Agricultural Seeds (Ireland) Act, 1909; the Bee Pest Prevention (Ireland) Act, 1908; and the Destructive Insects and Pests Acts, 1877 and 1907.

I am,

Sir,

Your obedient Servant,

E. O. FARRELL.

THE SECRETARY,
DEPARTMENT OF AGRICULTURE
AND TECHNICAL INSTRUCTION,
DUBLIN.

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DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

PROCEEDINGS UNDER THE FERTILISERS AND FEEDING STUFFS ACT, 1906, THE WEEDS AND AGRICULTURAL SEEDS (IRELAND) ACT, 1909, THE DESTRUCTIVE INSECTS AND PESTS ACTS, 1877 AND 1907, AND THE BEE PEST PREVENTION (IRELAND) ACT, 1908.

The following Report is concerned with the proceedings under the above-mentioned Acts for the season 1914. The period covered by the operations corresponds, roughly speaking, with the calendar year 1914. But the object in view is rather to present a complete account of one season's work. To do this it has been found necessary in places to go outside the limits of the calendar year. For example, in connection with Part II. of the Weeds and Agricultural Seeds (Ireland) Act, the publication of the results of tests of inferior samples of seed taken in the spring of 1914 is really the final stage of that season's work, and consequently, although the publication did not actually take place until March, 1915, it has been considered desirable, for the sake of completeness, to deal with it in this Report.

DETAILS OF OPERATIONS UNDER THE FERTILISERS AND FEEDING STUFFS ACT, 1906.

I.—GENERAL.

The artificial fertilisers sold in this country have been, on the whole, of a high standard for several years. The manurial mixtures recommended by the Department for the various crops (Leaflet No. 17) are now in general use among farmers. The worthless so-called blood and bone manures, in which a trade was carried on some time ago, no longer find a sale in any part of Ireland. Some rather low-grade slags and some unsatisfactory compound manures are still sold, but the quantity disposed of forms a very small part of the total trade. Some of these compounds are low-priced, but not well suited for the crops for which they are intended. Others are sold at higher prices than they are worth if valued on the basis of the unit prices issued by the Department. As the vendors generally give the percentages required by the Act, and these usually agree with the results of the analyses of samples taken by the official samplers, the desired improvement is to be looked for rather in the direction of the spread of education than of proceedings under the Act. The sale of such compounds has been diminishing year by year as farmers in increasing numbers are making it a practice to consult the local agricultural instructor before purchasing. This improvement has been well maintained during the year under review, as will be apparent from the summary of reports received from the agricultural instructors which is printed in the Appendices to this Report (Appendix No. IX.).

As will be observed from the reports of the agricultural instructors and overseers just referred to, the quality of the artificial feeding stuffs used in this country is, on the whole, satisfactory. Nevertheless, in the case of feeding stuffs, more than in that of fertilisers, unsuitable and sometimes excessively-priced special proprietary compounds are sold in certain districts from time to time. The Department have issued a leaflet (Leaflet No. 2) on the use and purchase of feeding stuffs, which contains, in addition to general advice on the feeding of live stock, a description of the principal artificial feeding stuffs, and some specimen rations. The agricultural instructors and overseers, moreover, carry out demonstrations and experiments with feeding stuffs with a view to bringing home to farmers the most profitable methods of feeding farm animals. Some of these demonstrations, described in previous reports, show clearly the disappointing, if not harmful, results of the use of high-priced but ill-suited proprietary calf meals and other preparations.

Those farmers, therefore, have only themselves to blame who, with the particulars before them which the Act requires vendors to give as to the quality of the materials sold, and with the facilities at present at their disposal for obtaining information as to the best manures and feeding stuffs for use on their farms, still allow themselves to be persuaded by advertisements or other inducements to purchase low-grade or excessively high-priced fertilisers or feeding stuffs.

Invoices.—The requirements of the Act in regard to the giving of invoices continue, as a rule, to be satisfactorily complied with by all the wholesale and manufacturing firms. Cases are brought to the notice of the Department from time to time in which retailers fail to comply with the Act in this respect through ignorance of its requirements or through carelessness. In such cases as these it is found that a letter from the Department, or a visit from an official sampler, is sufficient to secure compliance.

Two instances, however, came to the notice of the Department in which firms of considerable standing were remiss in the matter of giving the prescribed invoices to purchasers of artificial manures. The quality of the fertilisers was satisfactory and the price charged was not exorbitant. In accordance with their usual policy in such cases, the Department communicated with the firms, pointing out the requirements of the Act and intimating that legal proceedings would have to be instituted if the prescribed invoices were not given in future. The Department's communications failed to have the desired effect with one of these firms, and it was decided therefore to institute prosecutions. The Act requires that even in the case of prosecutions for failure to give invoices, although the quality of the manure is not questioned, an official sample must be taken within ten days after the delivery of the consignment to the purchaser. In one of the two cases selected for prosecuting, the purchaser's evidence did not convince the Court that the manure sampled was that supplied by the firm who were proceeded against. In the other case, the Court, although convicting, took a lenient view of the matter, and a small fine of 2*s.* 6*d.* with costs was imposed. The Department are naturally reluctant to bring firms into Court who are selling articles of good quality at fair prices, but they have no option where there is persistent neglect to comply with the law after ample warning. It is to be borne in mind that when a purchaser is not given an invoice he is deprived of the warranty which the law requires vendors of artificial manures to give. The Department's action, which, in view of the standing of the firm proceeded against, gave great publicity to the matter, has resulted in all-round improvement in the matter of giving invoices in that part of the country where the firm carries on business.

Official Samplers.—The staff of official samplers consisted of 65 officers, including the county itinerant instructors in agriculture, part of whose duties is to take samples for the purposes of the Act. One of these officers was, as usual, detailed by the Department to examine and sample feeding stuffs and artificial fertilisers at the ports and other distributing centres. This year, more than ordinary attention was given to the sampling of certain feeding stuffs, viz., maize meals, linseed cake meals, tailings and bran. The total number of samples of artificial fertilisers and feeding stuffs received during the year 1914 amounted to :—

255 fertilisers, of which 126 were tested.
586 feeding stuffs, of which 392 were tested.

A list of the official samplers and also a return of the number of samples taken in each county is given in Appendices Nos. II. and IV.

II.—FERTILISERS.

Analysis of Samples.—Both in sampling and in selecting samples for analysis special attention is paid to artificial fertilisers newly introduced or not tested for a considerable time previously, and to those which are either suspected to be unsuitable or inferior in quality or sold at excessive prices. Owing partly to the large increase in the number of feeding stuffs dealt with, and partly to the uniformity and satisfactory quality of the fertilisers now generally sold, the number of the latter sampled and submitted to chemical analysis was less than in previous years. Invoices and full particulars in regard to the consignments from which the samples of fertilisers were drawn were given in the case of **105** samples, out of the total of **126**. Of these **105** samples, **55** were found on analysis to be up to guarantee, **30** were found to be deficient within the limits of error allowed under the Fertilisers and Feeding Stuffs (Ireland) Regulations, **1910**, and **20** were found to be below these limits. A representative selection of the different manures tested is given at Appendix No. V. In regard to the **20** samples which were found below the limits of error, it is not to be assumed that these were cases in which a prosecution should or could have been instituted. If a prosecution is to be instituted it is necessary, in accordance with the Act and statutory regulations, that the sample should be taken in the presence of a witness within ten days from the delivery to the purchaser of the consignment, that it should be divided into three parts, and that one part should be sent to the vendor and two parts to the County Agricultural Analyst. One of the two parts sent to the latter must be analysed by him, and the other forwarded to and analysed by the Chief Agricultural Analyst, and the County Agricultural Analyst must forward a certificate of his analysis to the vendor and purchaser of the article sampled and to the official sampler. All the **20** samples referred to above are, however, "informal" samples, that is, they are taken by the official samplers, not for the purpose of instituting a prosecution, but for their own and the Department's information. Such samples are taken without the formalities required in the case of those drawn for the purpose of a prosecution, and in most of these cases, in fact, it is not possible to take samples for the purpose of instituting legal proceedings, as the consignments have already been delivered to the purchasers—merchants, shop-keepers, or farmers, as the case may be—for more than ten days before the sampler hears about them. It is the practice when an informal sample is found to be below guarantee on analysis to institute inquiries into the circumstances of the case, and if the inquiries reveal any intention to sell adulterated material or otherwise to perpetrate fraud, arrangements are made with a view to following the matter up and if possible obtaining formal samples for the purpose of taking proceedings under the Act.

Basic Slag.—The highest grade of this fertiliser—**34** per cent. —continues to be well patronised by farmers. A number of samples were tested and practically all found up to guarantee. Farmers are warned to be very careful in the purchase of basic slag. Their safest plan is to buy the higher grades and to demand with the quotations of firms offering this fertiliser a statement of the percentages of (1) citric soluble phosphates, (2) insoluble phosphates, and (3) fineness of grinding.

It is not asserted that a low-grade slag is necessarily bad. If, however, a farmer is inclined to buy such in preference to a higher grade, he should first consult his County Agricultural Instructor.

At present there is a want of uniformity in the methods of stating percentages by vendors of slags, with the result that farmers have, in some cases, considerable difficulty in ascertaining from the statements of different firms the relative merits of the slags offered by them. Thus in some cases slags are advertised as containing a certain percentage of total phosphates all available in the soil; in others the percentage of total phosphates is given with a statement that of this total a certain percentage is citric soluble; in others the percentage of total phosphates and of citric soluble phosphates is given; while in others the percentage of citric soluble phosphates alone is stated. Farmers, therefore, are strongly advised not to buy without the advice of the Agricultural Instructor.

Simple Manures.—Samples of simple manures such as superphosphate, nitrate of soda, sulphate of ammonia, etc., were analysed and found to be satisfactory. These materials continue to find a ready sale among farmers who have adopted the Department's advice and make up their own mixtures according to the formulas recommended by the Department.

Low-grade Compound Manures.—Some compound manures met with during the past season proved on analysis to be of low-grade quality. The worst of these was a manure sold as a "general fertiliser" in a few of the south-eastern counties. Small consignments of this manure had been imported by a local agent from a North of England firm. This same agent, it may be mentioned, has acted in previous years as the agent of some other cross-channel firms manufacturing rather low-grade articles. The Agricultural Instructor in County Kilkenny took a sample of this manure which was guaranteed to contain 18 per cent. citric soluble phosphates, 2 per cent. insoluble phosphates, and ·41 per cent. nitrogen and sold delivered in Mullinavat at £3 17*s.* 6*d.* per ton. Its value calculated in accordance with A. B. Memo. No. 4 for the season 1914, would be £2 4*s.* 1*d.* per ton. Two further consignments of manure manufactured by the firm referred to were also sampled officially with a view to having proceedings instituted under the Act if they were found below guarantee. The manure which made up these consignments was of somewhat different composition to that mentioned above, being guaranteed to contain 15 per cent. citric soluble phosphates, 4 per cent. insoluble phosphates, and ·82 per cent. nitrogen. The price charged delivered at nearest port was £4 15*s.* per ton. The value of the manure, calculated on the basis of unit prices, was about £2 16*s.* 3*d.* per ton. The samples were, however, found on analysis to be up to the very low guarantee given, and as invoices in proper form were supplied, the Department were unable to institute proceedings under the Act. The prices of these manures were excessive, and the quality and general composition were not such as to render them well suited for any particular crop. As far as the Department could ascertain only a few orders were given. In this particular county the Department succeeded last year in banishing another firm who were selling equally low-grade manures. A few farmers, however, here and there, can still be induced by plausible representations to place further orders for inferior fertilisers. The best means and one which the agricultural instructors are constantly adopting to bring home to farmers the futility of buying such manures, is the carrying out of practical demonstrations in the treatment of crops side by side with such compounds and with the mixtures recommended by the Department.

Manures recommended by the Department.—As a result of the series of experiments carried out some years ago the Department were enabled to issue in 1909 a memorandum setting forth manurial mixtures suitable for the various crops. The results of experiments carried out since have led to some slight modifications of some of the mixtures originally recommended. Those now recommended are set forth in the Department's Leaflet No. 17 ("The Use and Purchase of Manures"), copies of which may be obtained free of charge on application. (See also Appendix No. VIII.)

The shortage of potash occasioned by the war necessitated a temporary modification of these mixtures for the season 1914-15. For this season, farmers were advised by the Department to use somewhat increased dressings of mixtures practically identical with those recommended in leaflet 17 with the omission of potash for the principal crops other than potatoes (Appendix No. VII.). In the case of the potato crop farmers were recommended to use as much potash as they could afford, having regard to its scarcity and increased cost. This recommendation was made known through the Press and by means of a special supplement to leaflet 17 which was widely distributed.

Valuation of Artificial Manures, 1914-15.—The Department publish each year a memorandum (A.B. Memo. No. 4) containing unit values for the current season of the principal artificial fertilisers. This memorandum (Appendix No. III.) in addition to showing how to calculate from the unit values what a manure is worth, contains a table giving the sum to be added for cost of transit to any railway station in Ireland. Thus farmers in any district in Ireland are placed in a position to estimate the comparative values of various brands of the same class of manure offered to them.

The memorandum was revised for 1914-15 and re-issued as usual. Copies were sent to retailers of artificial manures, the county agricultural instructors, and to every farmer on the Department's mailing list for leaflets.

Owing to the decrease in the price of the simple nitrogenous manures, it was found possible to reduce the unit value from 15*s*. 6*d*. (figure for 1913-14) to 14*s*. for 1914-15. The unit price of phosphates soluble in water, had, however, to be increased by 1*d*. to 1*s*. 11*d*. The amount of potash available among the members of the Irish Fertilisers Manufacturers Association provided for an average of only one per cent. in the mixture for potatoes and a lower percentage in the mixtures for other crops. The Department would have preferred that all the potash would have been utilised in the mixture for potatoes, because a really good potato crop cannot, as a rule, be grown without this manure, whilst with cereals and turnips the benefit accruing from the use of potash is relatively much less.

III.—FEEDING STUFFS.

Analysis of Samples.—The number of samples of feeding stuffs received this year, 536, shows a very noticeable increase as compared with last year's figure. This is principally due to the fact that special instructions were given to the official samplers to investigate the trade in maize meals. Three hundred and ninety-two of the samples received were tested by the Department. Of the samples tested 32 were found to be below guarantee in respect of either the percentage of oil or that of albuminoids or both, but the deficiency was within the limits of error allowed under the Fertilisers and Feeding Stuffs (Ireland) Regulations, 1910. Thirty-seven samples were found to be deficient beyond these limits. For similar reasons to those mentioned in the paragraph dealing with the analysis of fertilisers, it must not be assumed that in the case of those 37 samples offences for which prosecutions could be instituted were committed, nor is it possible to draw from the foregoing figures any accurate inference as to the state of the trade generally or of the relative condition of the trade in this and previous years as regards compliance with the requirements of the Act. A selection representative of the samples tested will be found in Appendix No. VI. The summary at Appendix No. IX. will convey some idea of the quality of the artificial feeding stuffs now sold in Ireland.

Crushed Flaxseed.—The samples examined during the year were found satisfactory.

Linseed Cakes and Linseed Cake Meals.—A large number of samples of both cakes and meals were taken and tested this year. The majority of the samples were found satisfactory. In view of complaints received as to the sale of adulterated meals in Belfast, special attention was given during the year to the trade in linseed cake meals in that city. For this purpose one of the Department's officers was specially detailed to spend a considerable time in examining consignments and taking samples. In December, 1914, and in January and February, 1915, several cases were detected in which adulterated linseed cake meal appeared to have been supplied, the adulterant being earth nut cake meal—a substance which was considerably cheaper than linseed cake meal. The adulteration was carried out to a very serious extent, and the Department instituted proceedings under the Act. When the case came into court a plea of guilty was entered. The Solicitor representing the firm explained that the sale of this adulterated meal as linseed cake meal was due to the fact that owing to a large number of the firm's employees having enlisted, they were obliged to employ unskilled persons, who, in mistake, sent out as linseed cake meal another substance somewhat resembling it and described by the firm as their "Compound Feeding Meal." In all the circumstances of the case, and in view of the fact that previous to this the firm's linseed cake meals had been found to be, on the whole, satisfactory, the Department did not press for a heavy penalty. A fine of 10*s.* was imposed, and the firm undertook to pay all costs, which amounted to a sum of £15 15*s.* A point in the case of general importance should be referred to. On the top of the printed invoice form used by the firm appeared the following note:

> "FERTILISERS AND FEEDING STUFFS ACT, 1906.
>
> "We hereby declare that all feeding stuffs upon this invoice not therein specifically described as pure are prepared from more than one substance or seed."

Section I. of the Act requires the seller of artificial feeding stuffs to state on the invoice whether the feeding stuff sold is the product of one substance or seed or of more than one substance or seed. The note quoted above leaves it to the purchaser to infer that what is described in the invoice under a name, e.g., linseed cake meal, which indicates that it is prepared from some particular seed, may in reality be prepared from more than one particular seed unless it is specially described as "pure." Apart from the question whether this fulfils the requirements of the section of the Act referred to, the Department take strong exception to the use of any such note, as they consider it is calculated to mislead an unwary purchaser. The use of a note of this kind is not confined to this particular firm. The firm in question undertook not to insert it in any invoices in future, and the Department trust that other firms will do likewise.

At the same time, two retailers in Belfast were prosecuted for failing to give the prescribed invoice to purchasers of linseed cake meal. In these cases the meal sold was part of consignments supplied by the firm above referred to, containing earth nut cake meal. A fine of 10*s.* was imposed in each of these cases.

The Department have from time to time received complaints from farmers as to cases of sickness and death occurring amongst calves fed upon linseed cake meal. One such instance was reported as early as 1909. The meal complained of was found to be capable of developing ·026 per cent. of prussic acid after being subjected to conditions favourable to the formation of that poison. An experiment on a small scale was carried out with a view to ascertaining the effect of feeding the calves with this meal. The quantity of the meal available, however, was very limited and the experiment only extended for a period of two weeks. The veterinary surgeon who examined the animals at the end of the test certified that they were in good health and thriving, and the meal did not appear to have had any injurious effect upon them.

Other complaints, of a more or less definite character, have since been received, but it was not until recently that an instance of a sufficiently concrete kind enabled the Department to have a further test made.

In January, 1915, a sample of linseed cake was taken by one of the Official Samplers in County Clare, and forwarded to the Department for analysis. This sample was found to be capable of developing ·039 per cent. of prussic acid (=2·76 grains per lb.). The Sampler was thereupon instructed to purchase from the retailer on whose premises the sample had been taken 5 cwts. of the cake, with a view to having an experiment carried out.

An informal sample taken from the purchased cake was found to be capable of developing ·038 per cent. prussic acid (= 2·66 grains per lb.). Thereupon, at the direction of the Department a formal sample of the cake was taken, so that proceedings could, if found desirable, be instituted under the Fertilisers and Feeding Stuffs Act. The sample, on analysis by the Agricultural Analyst, Sir Charles Cameron, was certified to be capable of developing a slight quantity of prussic acid not estimated, and the Chief Agricultural Analyst estimated the amount as 083 per cent.

In February a member of the Clare County Council, wrote to the Department stating that he feared there must be some poisonous stuff mixed with meals sold in the County, that three calves belonging to him had died, and that he had been feeding the calves on linseed cake meal. Analysis of a sample taken at this gentleman's farm indicated that the meal was capable of developing 1·3 grains of prussic acid per lb. It appears that the meal had been purchased at the same retailer's shop at which the 5 cwt. above referred to was purchased by the Official Sampler.

The meal purchased by the Official Sampler was forwarded to the Department's Agricultural Station at Athenry, where an experiment was conducted on the feeding of calves.

Three calves about seven weeks old were selected for the purpose of the experiment and fed twice a day on two quarts of separated milk and ½ lb. linseed cake meal from a consignment which had been fed at the Agricultural Station during the winter to stall-fed cattle, weanling calves, etc.

This meal when tested in the Department's Chemical Advisory Division was found to develop 1·3 grains of prussic acid per lb. In feeding it to the calves it was made into a gruel by pouring boiling water on it one hour before use. Shortly after the calves were fed with this meal they started to scour, with the result that the veterinary surgeon who examined them would not pass them as healthy. They all gradually reduced in condition, and consequently at the end of the second week half of the separated milk had to be replaced by new milk. After this change they all improved in condition. On the twenty-third day from the time the experiment was started the veterinary surgeon examined the calves and passed them as being in normal health. Portion of the 5 cwt. of linseed cake which when tested at the Department's laboratory was proved capable of developing 0·33 per cent. of prussic acid (2·31 grains per lb.) was then fed to one of the calves. It received the same quantity of milk as previously, viz. :—

1 quart new milk,
1 quart separated milk,
and ½ lb. of the suspected linseed cake meal instead of ½ lb. of the Agricultural Station meal,

twice a day. This meal like the other, was steeped in boiling water for one hour before feeding. This calf, along with the other two, remained healthy at the end of the week. The meal was then steeped in boiling water twelve hours before feeding. At the end of the second week, as the calf remained healthy and in good thriving condition, not having suffered in the least from the suspected meal, the experiment was brought to a close. It will be observed that this experiment goes to show that this particular linseed cake meal, which was capable of developing under favourable conditions as high a percentage as ·033 per cent. of prussic acid (=2·31 grains per lb.), had no apparent ill-effect upon calves when used in reasonable quantities along with new milk and separated milk in certain proportions.

In the circumstances the Department did not consider the case one in which proceedings under the Fertilisers and Feeding Stuffs Act were called for.

Decorticated Cotton Cakes and Meals.—The samples examined were found to be satisfactory. No complaints were received by the Department this year as to the injurious effects of feeding decorticated cotton cake or meal.

Calf Meals.—A small number of proprietary calf meals at excessive prices continue to be sold to farmers although the Department have made, and are making, every effort to impress upon farmers the fact that the use of these meals is rarely, if ever, economical. Apart from the fact that they are sold at excessive prices, they are, owing to their composition, not always suitable materials to use for rearing young calves. Several experiments have been carried out by the Department with different meals, details of which will be found in previous reports. Early last summer the Department ascertained that a travelling agent in the west of Ireland was obtaining orders for a calf meal manufactured by an English firm and sold at a price of about 22*s*. 6*d*. per cwt. The meal in question was guaranteed to contain 8 per cent. oil and 14 per cent. albuminoids. In some cases the sale of the meal did not appear to be accompanied by an invoice. Arrangements were made for having official samples taken, and a prosecution instituted, but after spending considerable time and experiencing a great deal of difficulty in arranging the prosecution the Department found that the farmer who had bought the meal had been, in fact, supplied with an invoice though he repeatedly denied the fact. The invoice was ultimately found amongst the farmer's papers, and the Department had no means of ascertaining when or how it had been supplied, nor had they any reason for supposing that the invoice had not been supplied about the time of the delivery of the goods. It may be mentioned that in this district the Department's officers have devoted considerable time to dealing with inferior manures and feeding stuffs. The districts are congested districts in the west of Ireland, and despite the fact that the Department's officers are constantly advising farmers against the use of these meals, orders continue to be placed, though only in a very small number of cases.

Maize Meals.—The sale of maize meals has been engaging the Department's special attention. Their enquiries into the matter are still in progress.

Bran.—Considerable attention has also been given to the sale of bran, the principal complaint being that it contained an excessive percentage of moisture. The moisture content of the 29 samples analysed by the Department varied from 11 per cent. to 17 per cent. There is no doubt the latter figure is excessive, but the absence of a legal standard renders it difficult to make offenders amenable.

Tailings.—The attention of the Department has also been drawn to the sale of adulterated samples of tailings. Two out of seven samples examined were found to contain tapioca flour. So far, however, a case has not been brought to the notice of the Department in which they considered legal proceedings were sustainable.

IV.—COUNTY ANALYSTS.

A list of the County Agricultural Analysts is given at Appendix No. I. No changes have been made during the year.

DETAILS OF OPERATIONS UNDER PART I. OF THE WEEDS AND AGRICULTURAL SEEDS (IRELAND), ACT, 1909.

Part I. of the Act provides that with the consent of the County Council of any County, certain weeds may be declared noxious, and the Department may take certain measures to require the occupiers of land to destroy these weeds.

A table showing the weeds scheduled as noxious in each county in which the County Council has consented to put the Act into force will be found in last year's Report. The only counties which have not consented up to the present date are: Cavan, Clare, Cork, Leitrim, Longford, Sligo, Waterford, Wexford and Wicklow.

In 1914 thirty-six temporary inspectors were employed in July and part of August to make visits to farms and holdings for the purpose of securing the destruction of noxious weeds. The number of holdings on which such weeds were found to be prevalent in such quantities as to warrant the Inspector in reporting the matter specially to the Department was 13,211. In 7,715 of these cases the Notice prescribed by the Act was served on the occupier requiring the weeds to be destroyed within a certain period. In the remaining cases the Inspector was satisfied that the occupiers could be relied upon to carry out the work voluntarily. In the vast majority of the 7,715 cases the Notices were complied with. In 94 instances prosecutions for failure to comply with Notices were instituted.

Apart from their functions as inspectors, the officers engaged in this work have been instrumental in bringing home to farmers by interviews the harm done by the spread of noxious weeds. Many farmers, of course, have always realised that the cutting of noxious weeds should be regarded as an ordinary operation in connection with the management of their farms, but some occupiers will be found who, for various reasons, neglect to carry out this necessary work. In such cases the Department prosecute the offenders if after due notice they fail to destroy the weeds.

In some cases persons who have taken land on the eleven months' system or for other short terms as graziers, have considered it a grievance that they and not the landlord should be held responsible for the cutting of weeds on lands so taken. The responsibility under the Act, however, rests upon the person who for the time being has the exclusive use of the land on which the weeds are grownig. Of course, graziers and others in temporary occupation of lands can have inserted—as is done in many cases—in the agreements under which they take the land a clause making it obligatory upon the lessor to cut the weeds for them. So far as the Act is concerned, the lessee, if he has exclusive use of the land, must, however, be held liable for having the work carried out.

The following Table shows the number of cases in which notices under the Act were served in each county, the number of cases in which special visits were made but no notices served, and the total number of cases visited by the Inspectors in 1914.

	No. of cases in which Notices were served.	No. of cases visited in which Notice was not necessary.	Total Cases.
Antrim, . .	328	397	725
Armagh, . .	377	148	525
Carlow, . .	227	196	423
Donegal, . .	137	106	243
Down, . .	405	313	718
Dublin, . .	244	99	343
Fermanagh, . .	150	129	279
Galway, . .	545	452	997
Kerry, . .	660	296	956
Kildare, . .	269	148	417
Kilkenny, . .	670	320	990
King's, . .	375	363	738
Limerick, . .	309	278	587
Londonderry, .	371	369	740
Louth, . .	252	118	370
Mayo, . .	412	216	628
Meath, . .	245	512	757
Monaghan, . .	317	185	502
Queen's, . .	132	276	408
Roscommon, .	163	84	247
Tipperary (N.R.) .	105	99	204
,, (S.R.) .	529	73	602
Tyrone, . .	335	248	583
Westmeath, . .	158	71	229
Totals, . .	7,715	5,496	13,211

DETAILS OF OPERATIONS UNDER PART II. OF THE WEEDS AND AGRICULTURAL SEEDS (IRELAND) ACT, 1909.

Early in 1914 the Department, by circular letter, again called the attention of all the seed traders in Ireland of whom they had the names and addresses, to the terms of the agreement arrived at in July, 1913, by the seed cleaners, whereby they undertook to discontinue the sale in Ireland for use as agricultural seed of certain low-grade classes of rye-grass and other inferior grass seeds. A poster was also issued for display at all the police stations throughout Ireland at the time when farmers purchase their seeds, warning them not to buy inferior seeds.

During the spring of 1914 the sampling for the purpose of the Act of agricultural seeds on the premises of seed merchants was carried on as usual. The staff of official samplers consisted of 42 agricultural instructors, 21 agricultural overseers, and 8 other officers. Samples were taken from the stocks of 1,594 merchants, the total number of samples amounting to 4,971. While the number of merchants whose stocks were sampled shows a slight increase as compared with the figure for last year, the number of samples taken shows a decrease of 1,275. This season official samplers were instructed that when in a particular retailer's stores samples of seeds supplied by a particular wholesale firm were once obtained, it would not be necessary to sample again at other retailers stores exactly the same class of seed supplied by the same wholesale firm, unless the seed appeared to be distinctly unsatisfactory. Every year, of course, the attention of the sampler is concentrated, so far as the *sampling* is concerned, mainly upon seed which for any reason he suspects to be unsatisfactory, but he is definitely instructed to *inspect* all seed in every retailer's shop in his county or district if he possibly can. The total number of shops visited is, therefore, much more than the number given above at which samples were taken

In a few cases retailers refused permission to the sampler to take samples of their seeds without payment. The Department, as pointed out in last year's report, are under no obligation to make payment for samples taken for the purposes of the Act, nor are they prepared in the ordinary course to do so. Refusal to permit official samplers to take samples of agricultural seeds on the premises on which such seeds are sold, amounts to obstruction under the Act, and renders the occupier of the premises liable to a penalty of £5. When this was pointed out, the Department are glad to say, the refusal to allow samples to be taken was in no case persisted in.

All the samples received by the Department were transferred to the Department's Seed Testing Station for examination.

Out of the 4,971 samples received, 1,136 were tested, and 610 were reported by the Department's Seed Testing Station to be unsatisfactory in various degrees. For the reasons mentioned in last year's Report no deduction is warranted from these figures as to the general state of the trade. The public are at times asked to draw altogether incorrect inferences from statistics of this kind. The fact that the proportions of the total samples *tested* annually by the Department which proved to be unsatisfactory are fairly constant for the five years since the Act came into operation, does not in any way indicate that there is no improvement in the state of the trade. Obviously, such an inference could only be valid if the total number of samples tested each year had a constant relation to and were representative of the bulk of the trade in these commodities during those years. But such is not the case. In the first year, 1909, when the Act came into operation the total number of samples of seeds taken amounted only to 866. In the year 1913, 6,246 samples were taken. This was due to the fact that a much more exhaustive sampling was carried out in 1913. In 1914 the number of samples taken fell somewhat. Moreover, the samples actually tested are, generally speaking, the worst of those which have been already selected by the samplers as being probably inferior. The reports of the samplers indicate that the quantity of inferior seed now sold is diminishing—particularly as regards ryegrass seeds.

It is satisfactory to be able to state that with the exception of four isolated instances no seed was found at any retailer's premises throughout the country which fell below the standard of the agreement arrived at by the seed cleaners in 1913. The four instances referred to were cases in which perennial ryegrass of 18 lb. bushel weight had been supplied to retailers, the wholesale supplier being different in each case. Three of these were instances in which a small lot had been sent out as explained by the wholesale firm, in error. This explanation was borne out by the fact that the wholesale firms concerned who were suppliers of very large quantities of seed throughout the country had in no other instance been found to have sent out any similar seed to any retailer in this country. In the fourth instance, however, the seed appears to have been sent out with the knowledge and concurrence of the firm, and in these circumstances the Department felt obliged to publish the fact that this firm had supplied inferior seeds.

It can now be said that so far as the seed trade proper is concerned, the sale of the most unsatisfactory classes of ryegrass seed and such articles as blowings, cleanings, holcus, white and brown hayseed has been entirely abolished. Unfortunately, however, there still exists a trade in so-called "hayseed," consisting of the sweepings of hay lofts and hay sheds. This trade is carried on, for the most part, by farmers themselves, who sell in the open markets in country towns large quantities of this stuff. It is also sold, however, in some cases by shopkeepers, who purchase the sweepings of hay lofts from farmers, and by the occupiers of forage stores and stables in towns. The difficulty of dealing effectively with this state of affairs under the present powers of the Department is obvious. There is at present no power to interfere with the sale by one farmer to another of this class of material, nor is it easy to see what means other than the spread of education can effectively put a stop to it. Where, however, the material is sold by a seed trader there is a presumption that it is suitable for the production of hay or pasture, and if it is sold and found not to be fit for this purpose, the vendor is liable for an action for breach of implied warranty. Through the instrumentality of a public-spirited farmer in County Cork, the Department were enabled to make this clear to all concerned, and, at the same time, to demonstrate fully the worthless character of this so-called "hayseed." For this purpose the farmer in question purchased in April, 1914, from a retailer, a quantity of what was described as "hayseed" and sold for the production of permanent pasture. This "hayseed" was sown by the farmer on a portion of his land adjoining which a plot had been laid down with grass seeds of good quality. In the course of the autumn and winter, inspections were made of the two plots, and it was found that the land sown with the "hayseed" produced nothing but a mass of weeds, while the other plot gave every evidence of producing a satisfactory crop of grass. Thereupon an action was taken by the farmer against the retailer for breach of implied warranty under the Sale of Goods Act, with the result that he obtained a decree for £8 for loss of crop, as well as £4 special expenses. The facts of this case were widely published in the newspapers, and formed the subject of favourable comment at a meeting of the Cork County Committee of Agriculture, at which a resolution was passed expressing the high appreciation of the Committee for the public spirit displayed by this farmer. It is hoped that this action will be a deterrent to any retailers who are accustomed to sell such altogether worthless materials to farmers and in order that they might be made aware of their liability the Department have circulated widely a memorandum drawing attention to the matter. (See Appendix No. XIII.) The Department have also in some cases where this "hayseed" has been sold by retailers, published their names and addresses by means of posters in the manner described later in this report; but vendors of this class of material have often little or no trade reputation for good seed. Under the Fertilisers and Feeding Stuffs Act, the sale of deleterious feeding stuffs is made a criminal offence, for which a vendor may be prosecuted. The sale of so-called "hayseed" which not only is useless for the production of a crop, but often introduces noxious weeds on the land on which it is sown, is an offence against the agricultural interests of the country, which might well render the offender liable to prosecution equally with the vendor of harmful feeding stuffs. In the absence of statutory powers in this respect, the Department can only do their best by educational methods and by such means as the law at present provides to stop the trade in these worthless materials.

Of the 610 samples which were found to be more or less unsatisfactory, a return was made by the Seed Testing Station of 228 which were considered to be distinctly inferior in quality. These 228 represented portion of the stocks of 184 retailers, and the wholesale firms from whom the seeds in question were stated by the retailers to have been procured numbered 20. Of the 228 samples referred to, 37 consisted of seeds which the retailer at the time of sampling admitted to have been procured from the wholesale firm in a preceding season, and consequently must have been held over on the retailer's premises for at least a year. In each of the 228 instances in question the Department communicated with the retailer on whose premises the seed was sampled and with the wholesale merchant from whom the seed was stated to have been procured. In the course of the correspondence which ensued it transpired that 45 samples, in addition to the 37 mentioned above, were seeds which had been held over by the retailer from a preceding season. In some instances the seed was mixed with fresh seed. In these 45 cases, however, there was no indication given to the sampler, so far as the Department can ascertain, that the seed in question had not been procured from the wholesale firm in the current season.

Under Section 5 (2) of the Act, a retailer on whose premises a sample of seed is taken, is bound to give the name and address of the person from whom he procured the seed, and may be prosecuted if he gives a false name and address. It is obvious that it would be a hardship upon a wholesale firm to have their name published as suppliers of inferior seed which they, in fact, did not supply or which had deteriorated owing to its being held over under unsuitable conditions at a retailer's shop from a previous season. The Department, therefore, considered that action should be taken to bring home to retailers their obligation to supply correct particulars. Five cases were selected for the institution of prosecutions. The following are particulars of these cases :—

No. I.—In this instance a sample of Alsike Clover seed was taken on the premises of a trader in Mullingar and certified by him to have been obtained early in 1914 from a wholesale merchant in Edinburgh. On testing the sample was found to be a very inferior one, the germination being only 30 + 7 hard seeds per cent. On examination the seeds appeared to be old. The wholesale firm concerned denied having supplied the seeds from which the sample was taken and furnished the Department with a sample of what they had supplied. On further inquiry by the Department the wholesale firm undertook to give evidence to the effect that the seeds sampled were not those supplied by them. On the hearing of the case a fine of £1 with £1 costs was imposed.

No. II.—In this case a trader in Co. Galway was prosecuted for a similar offence. The seeds in this case were stated at the time of sampling to have been procured from a Glasgow firm during the season 1914. The trader, however, subsequently admitted in correspondence with the Department that they really consisted of a mixture of old and fresh seeds. The sample taken by the Department was a most inferior one, the germination being only 30 + 2 hard seeds per cent. Accordingly proceedings were instituted, with the result that a fine of 10*s.* with £1 costs was imposed.

No. III.—The circumstances in this case were similar to those in No. II., the same wholesale firm being again concerned. In a letter of explanation in regard to the inferior nature of the seeds the retailer, who carried on business in Headford, Co. Galway, "blamed whatever was wrong on an assistant who had been going wrong for some time and who had been since dismissed." The seeds in this case also appeared to consist of a mixture of old and fresh seeds, and on testing were found to have a germination of only 19+11 hard seeds per cent. and a purity of only 64·95 per cent. The case was, however, dismissed without costs by the magistrates, as the witness who attended from the wholesale firm was not in a position to give conclusive evidence as to the seeds actually sent out by the wholesale firm.

No. IV.—In this case two summonses were issued against a trader in Tuam for giving false information in respect of two samples of very inferior clover seeds taken on his premises. The retailer stated that the consignments from which the samples were taken had been procured in 1914 from a wholesale merchant in Belfast, but he subsequently admitted that the seeds had been in stock for two years and had been originally procured from a different wholesale merchant. The samples in question were white and yellow clover and on testing germinated only 28+3 hard seeds per cent. and 41+6 hard seeds per cent. respectively. On the day fixed for the hearing of the case no magistrate attended, and the court was accordingly adjourned. In the meantime, the Department ascertained that the trader in question against whom the summonses were issued, while acting as the proprietor of the business was not so in fact, the real owner of the business being his wife. As this defence, if raised in court, would not only have necessitated the dismissal of the case but would also have prevented even the stating of it and the consequent showing up of the inferior nature of the seeds, the Department were compelled to drop the proceedings, and it was then too late to initiate proceedings against the proper party owing to the expiration of the time limit allowed by the law.

No. V.—In this case the offence alleged was similar. The sample was taken on the premises of a trader in Tobercurry, Co. Sligo, and was found on testing to have a germination of only 7+3 hard seeds per cent., with a purity of only 17·5 per cent. The seeds, which were stated to be White Clover, in reality consisted of a mixture of White and Red Clover seeds. As the results of testing show, they were quite worthless for sowing purposes and consisted of what appeared to be odds and ends of old clover seeds in stock from previous years. The explanation given by the retailer was to the effect that the seeds in question, when exposed for sale outside his premises, had been accidentally spilled and swept up again. This, however, could not in any way have explained the condition in which the seed was when sampled. In this case, however, the information as to the origin of the seeds was given by the manager of the business, and not by the owner. On the hearing of the case this point was raised by the defence and the case was dismissed by the magistrates on the ground that the prosecution under the Act being a criminal offence, the owner of the business could not be held liable for the false information given by his manager. As this raised an extremely important issue in connection with the administration of the Act, the Department decided to have a case stated submitted to the King's Bench. A case was accordingly prepared and submitted to a Court of the King's Bench in February last, who unanimously decided that the trader in question was responsible for the statements made by the manager, and the case was accordingly remitted to the magistrates for re-hearing. In view of the very inferior nature of the seeds concerned, the costs of the proceedings in the King's Bench Division were given against the retailer in question. On the subsequent hearing the case was by a majority of the magistrates dismissed on its merits.

The Department decided this year to publish the names and addresses of certain retailers, together with the results of the tests of samples of inferior seeds taken on their premises. This course was not adopted without ample warning having been given to those likely to be affected. The policy of the Department in this regard is set forth fully in last year's Report. It is sufficient to point out here that as this is practically the first occasion on which the power of publication was exercised by the Department, a beginning was made with seeds of a very inferior character. Forty-five cases were selected on the basis of inferior quality. The great bulk of these were instances in which seed had been kept over from previous years. In 15 of them the previous record of the trader concerned was good, and the Department were able to accept the explanation offered as to the presence of the seeds on his premises. In the remaining 30 cases publication was made by means of posters in the following form:—

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

PUBLICATION OF TEST OF INFERIOR SEED.

SAMPLE TAKEN MAY, 1914; TESTED JUNE, 1914.

A Sample of Seed described as "Alsike Clover," taken on the premises of—

A—— B——,
OF C——,

was tested for Purity and Germination, with the following result:—

Out of every hundred "Alsike Clover" seeds in the sample, only twenty-six sprouted or germinated when tested under the most favourable conditions. A considerable proportion (13·9 per cent.) of the weight of the sample consisted of impurities.

Published by the Department of Agriculture and Technical Instruction for Ireland, in exercise of the powers conferred upon them by the Weeds and Agricultural Seeds (Ireland) Act, 1909.
March, 1915.

The following are the names and addresses of the traders, the description of the seeds, and the results of the tests in each case :—

COUNTY ARMAGH.

George Dickson, Tandragee. *Alsike Clover.* Result : Out of every hundred "Alsike Clover" seeds in the sample, only twenty-six sprouted or germinated when tested under the most favourable conditions. A considerable proportion (13·9 per cent.) of the weight of the sample consisted of impurities.

Robert Doyle, Merchant, Markethill. *Alsike Clover.* Result : Out of every hundred seeds of "Alsike Clover" in the sample, only twenty-four sprouted or germinated when tested under the most favourable conditions. A considerable proportion (10·85 per cent.) of the weight of the sample consisted of impurities.

Robert Emerson, Market Street, Tandragee. *Alsike Clover.* Result : Out of every hundred "Alsike Clover" seeds in the sample only sixteen sprouted or germinated when tested under the most favourable conditions. A considerable proportion (16·3 per cent.) of the weight of the sample consisted of impurities, chiefly weed seeds.

W. & D. Irwin, Woodhouse Street, Portadown. *White Clover.* Result : Over one-third (35·5 per cent.) of the weight of the sample consisted of impurities. Out of every hundred "White Clover" seeds in the sample only sixty-nine sprouted or germinated when tested under the most favourable conditions.

P. J. Sheil, Woodhouse Street, Portadown. *Timothy.* Result : Practically none (0·2 per cent.) of the "Timothy" seeds in this sample were capable of sprouting or germinating when tested under the most favourable conditions. The sample consisted almost entirely of seeds of Timothy.

COUNTY CAVAN.

Joseph Ronaldson, Main Street, Cootehill. *English Red Clover.* Result : Out of every hundred "Red Clover" seeds in the sample only five sprouted or germinated when tested under the most favourable conditions. A considerable proportion (10·8 per cent.) of the weight of the sample consisted of impurities.

COUNTY CORK.

M. & C. Healy, Burlington Quay, Bandon. *Common Hayseed.* Result : More than three-fifths (61·9 per cent.) of the weight of the sample consisted of impurities, chiefly weed seeds and rubbish. The remainder of the sample consisted chiefly of ryegrass seeds, out of every hundred of which only thirty-five sprouted or germinated when tested under the most favourable conditions.

P. Keohane, Bandon. *Alsike Clover.* Result : Out of every hundred "Alsike Clover" seeds in the sample, only five sprouted or germinated when tested under the most favourable conditions. A considerable proportion (11·1 per cent.) of the weight of the sample consisted of impurities, including many weed seeds.

J. O'Herlihy, Cramer Street, Kinsale. *White Clover.* Result : Less than two-thirds of the weight of the sample consisted of White Clover seeds, the remainder (34·8 per cent.) being impurities. Out of every hundred "White Clover" seeds in the sample eighty-five sprouted or germinated when tested under the most favourable conditions.

S. H. Warner, Warner's Cash Warehouse, Castletownbere. *White Clover.* Result : Nearly a quarter (21·25 per cent.) of the weight of the sample consisted of impurities, chiefly weed seeds. Out of every hundred White Clover seeds in the sample only forty-one sprouted or germinated when tested under the most favourable conditions.

Mrs. J. Sheehan, 7 Cross Street, Cork. *Hayseed.* Result: Over one-third (37·1 per cent.) of the weight of the sample consisted of impurities, chiefly weed seeds and rubbish. The remainder of the sample consisted chiefly of ryegrass seeds, out of every hundred of which only twenty-seven sprouted or germinated when tested under the most favourable conditions.

COUNTY GALWAY.

L. Conroy & Son, Ballinasloe. *Alsike Clover.* Result: Out of every hundred "Alsike Clover" seeds in the sample only seven sprouted or germinated when tested under the most favourable conditions. A considerable proportion (21·95 per cent.) of the weight of the sample consisted of impurities.

Winifred M. Davis, Headford. *White Clover.* Result: Out of every hundred "White Clover" seeds in the sample only nineteen sprouted or germinated when tested under the most favourable conditions. Over one-third (35·05 per cent.) of the weight of the sample consisted of impurities, which included the seeds of thirty-two different kinds of weeds.

Thomas McDonogh & Sons, Galway. *Perennial Ryegrass* (20 lbs.). Result: Out of every hundred "Perennial Ryegrass" seeds in the sample, only one sprouted or germinated when tested under the most favourable conditions. 5·15 per cent. of the weight of the sample consisted of impurities.

T. J. Mellin, Vicar Street, Tuam. *White Clover.* Result: Out of every hundred "White Clover" seeds in the sample only twenty-eight sprouted or germinated when tested under the most favourable conditions. A very considerable proportion (21·5 per cent.) of the weight of the sample consisted of impurities, including the seeds of thirty-four different kinds of weeds.

Martin S. Walsh, High Street, Tuam. *Yellow Clover.* Result: Out of every hundred "Yellow Clover" seeds in the sample only fourteen sprouted or germinated when tested under the most favourable conditions. 5·3 per cent. of the weight of the sample consisted of impurities.

COUNTY LEITRIM.

P. J. Tiernan, Main Street, Carrigallen. *Red Clover.* Result: Out of every hundred "Red Clover" seeds in the sample only three sprouted or germinated when tested under the most favourable conditions. A small proportion (1·9 per cent.) of the weight of the sample consisted of impurities.

COUNTY LIMERICK.

J. J. Foley, Sexton Street, Limerick. *Hayseed.* Result: More than half (52·35 per cent.) of the weight of the sample consisted of weed seeds, rubbish, and other impurities. The remainder of the sample consisted chiefly of ryegrass seeds, out of every hundred of which only 32 sprouted or germinated when tested under the most favourable conditions.

COUNTY MAYO.

H. Canning, Straide, Ballyvary. *Perennial Ryegrass* (Cowgrass). Result: Only about three-quarters (76·2 per cent.) of the weight of the sample consisted of seeds of Perennial Ryegrass, which, when tested under the most favourable conditions, was found to be nearly all dead. The remainder of the sample consisted almost entirely of weed seeds and rubbish.

Carey, Ltd., Newport. *Alsike Clover.* Result: Out of every hundred "Alsike Clover" seeds in the sample only five sprouted or germinated when tested under the most favourable conditions. A small proportion (4·1 per cent.) of the weight of the sample consisted of impurities, chiefly weed seeds.

T. J. Hynes, Belmullet. *Mangel.* Result: Out of every hundred "Mangel" seed-clusters, each consisting of from two to four seeds only thirty-three plants developed when tested under the most favourable conditions. The sample consisted almost entirely of mangel seeds.

H. Ruddy & Co., King Street, Ballina. *White Clover.* Result : Almost one quarter (24·35 per cent.) of the weight of the sample consisted of impurities, chiefly weed seeds. Out of every hundred White Clover seeds only nine sprouted or germinated when tested under the most favourable conditions.

Elizabeth Walsh, Newport. *Perennial Ryegrass* (18 lbs.). Seed stated to have been procured in April, 1914, from G. J. Alexander & Co., Mary's Abbey, Dublin. Result : Out of every hundred "Perennial Ryegrass" seeds in the sample only thirty-six sprouted or germinated when tested under the most favourable conditions. 5·5 per cent. of the weight of the sample consisted of impurities.

County Meath.

Thomas Fagan & Co., Main Street, Athboy. *Perennial Ryegrass* (26 lbs.). Result : Out of every hundred "Perennial Ryegrass" seeds in the sample only twenty-eight sprouted or germinated when tested under the most favourable conditions. 6·85 per cent. of the weight of the sample consisted of impurities.

Christopher Farrell, Ludlow Street, Navan. *White Clover.* Result : Out of every hundred "White Clover" seeds in the sample only twenty-nine sprouted or germinated when tested under the most favourable conditions. A considerable proportion (14·4 per cent.) of the weight of the sample consisted of impurities.

Queen's County.

P. J. Delaney, Main Street, Mountrath. *White Clover.* Result : Out of every hundred "White Clover" seeds in the sample only twenty-nine sprouted or germinated when tested under the most favourable conditions. A considerable proportion (11·4 per cent.) of the weight of the sample consisted of impurities.

County Sligo.

J. & P. Burke, Tobercurry. *English Red Clover.* Result : Less than one-fifth (17·5 per cent.) of the weight of the sample consisted of seeds of Red Clover. Out of every hundred Red Clover seeds in the sample only seven sprouted or germinated when tested under the most favourable conditions. Over two-thirds (67·95 per cent.) of the weight of the sample consisted of White Clover seeds which were found, on testing, to be practically all dead. The seeds of thirty-six varieties of weeds were also found in the sample.

County Tipperary.

T. Walsh & Son, Cahir. *Alsike Clover.* Result : A considerable proportion (12·3 per cent.) of the weight of the sample consisted of impurities. Out of every hundred "Alsike Clover" seeds in the sample only twenty-three sprouted or germinated when tested under the most favourable conditions.

County Westmeath.

John Kelly & Son, Kilbeggan. *Alsike Clover.* Result : More than one-quarter (25·55 per cent.) of the weight of the sample consisted of impurities, including a large number of weed seeds. Out of every hundred "Alsike Clover" seeds in the sample only fourteen sprouted or germinated when tested under the most favourable conditions.

T. L. O'Callaghan & Son, Killucan. *English Red Clover.* Result : Almost one-half (46·9 per cent.) of the weight of the sample consisted of impurities. Out of every hundred "Red Clover" seeds in the sample only fifty-four sprouted or germinated when tested under the most favourable conditions.

The posters were displayed in the towns in which the retailers carried on business, and on the roads leading thereto. They were put up at the time of the year when farmers were purchasing their seeds, and as far as possible on market days, when the greatest number of farmers would have an opportunity of seeing them.

Judging from reports received, this form of publication appears to have accomplished its object. The posters were generally seen and understood by farmers, and provoked a good deal of comment.

In certain cases the posters were torn down or obliterated shortly after being put up. In one such case where posters put up in Tuam were repeatedly torn down or defaced, a prosecution was instituted against a labourer who was detected in the act of destroying a poster. The Court considered the offence a serious one, and inflicted a fine of £1 and costs.

REPORT OF THE DEPARTMENT'S SEED TESTING STATION FOR THE YEAR 1914

During the period extending from October 1st, 1913, to September 30th, 1914, the total number of samples of seeds tested was 2,791. This number is an increase of 216 samples over the corresponding total for the previous year, and is the largest number of samples ever tested in one year at the Department's Seed Testing Station since its inauguration.

Since many of the samples, particularly those connected with investigation work, have been tested more than once, the number of tests made considerably exceeded the above figure, and was well over three thousand.

The work of the Seed Testing Station may be divided into two parts—firstly, that dealing with samples taken for the purposes of the Weeds and Agricultural Seeds (Ireland) Act, 1909, and secondly, that connected with the testing of samples submitted by farmers, seed merchants, departmental officers and others for their information or in connection with investigations. The arrangements under which samples are tested for farmers and seed merchants are set out in the Department's Leaflet No. 59, copies of which may be obtained on application to the Department.

(1) *Samples taken for the purposes of the Weeds and Agricultural Seeds (Ireland) Act* 1909.—During the period under review 4,971 samples of agricultural seed were received at the Seed Testing Station in connection with this Act. Samples were received from every county in Ireland, and the number of samples received from each county will be found in the annexed Table 1.

Every sample received at the Seed Testing Station was examined, and 1,136 samples were tested, this being 270 more than were tested during the previous year. Of these samples all were tested both for purity and germination with the exception of 121 samples of grass seeds which, for special reasons, were tested for purity alone.

As in previous years those samples were selected for testing which, from their appearance, description, or other circumstances, it was thought would probably prove to be inferior. Particular attention was paid to ryegrass seeds of the lower bushel weights, to clover samples which appeared to be inferior and to samples of all classes of seeds which were certified as having been held over from a previous season.

The number of samples found to be unsatisfactory in varying degrees was 610, this being about 54 per cent. of the number tested, and 12 per cent. of the number received.

The following Table shows the number of samples received, the number tested, the number found to be unsatisfactory.

TABLE 1.

County.	No. of Samples Received.	No. of Samples Tested.	No. of Samples Unsatisfactory.
Antrim, . .	170	18	5
Armagh, . .	89	21	14
Carlow, . .	76	6	4
Cavan, . .	68	13	7
Clare, . .	196	58	32
Cork, . .	517	77	46
Donegal, . .	198	43	20
Down, . .	134	31	18
Dublin, . .	66	9	3
Fermanagh, . .	50	6	2
Galway, . .	531	145	82
Kerry, . .	363	169	102
Kildare, . .	63	2	1
Kilkenny, . .	216	16	6
King's, . .	72	13	8
Leitrim, . .	93	24	20
Limerick, . .	123	27	15
Londonderry, .	142	8	1
Longford, . .	44	6	5
Louth, . .	55	3	0
Mayo, . .	334	115	76
Meath, . .	60	11	5
Monaghan, . .	44	2	0
Queen's . .	215	22	11
Roscommon, .	155	37	21
Sligo, . .	107	31	16
Tipperary, . .	317	38	21
Tyrone, . .	121	10	4
Waterford, . .	88	13	6
Westmeath, . .	87	23	21
Wexford, . .	99	14	10
Wicklow, . .	78	4	2

On consulting the list of counties from which samples are forwarded in the ordinary way for testing at the Seed Testing Station by farmers and seed merchants as shown on page 31, it will be found that but few samples are received in this manner for testing from those counties in which, as is indicated by "Act" samples, the most unsatisfactory seeds are prevalent.

In the following Table will be found particulars of the kinds of seeds tested, with the average results obtained for the unsatisfactory samples.

TABLE 2.

Kind of Seed.	No. Tested.	Unsatisfactory Samples.		
		Number.	Average per cent. Germination.	Average per cent. Purity.
Oats, ...	12	4	81	98·2
Perennial Ryegrass, .	261	191	56	90·5
Italian Ryegrass, . .	309	162	43	94·4
Cocksfoot, . . .	11	6	62	87·4
Meadow Foxtail, . .	10	7	25	92·7
Timothy, . . .	18	3	41	97·8
Hayseed, . . .	6	6	28	53·8
Red Clover, . . .	134	52	57+6 h	90·0
White Clover, . .	103	52	59+10 h	79·9
Alsike Clover, . .	63	44	46+12 h	89·5
Trefoil, ...	41	31	53+8 h	97·5
Mangel, . . .	23	17	71	100·0
Miscellaneous,* . .	24	9	—	—

h=hard seeds.

* Including Swede 6, Meadow Fescue 4, Rye 3, Vetch 3, Barley 1, Hard Fescue 1, Mixtures 3, Turnip 1, Rape 1, Cabbage 1.

The 261 samples of Perennial Ryegrass tested included 215 of only 20 lbs. bushel weight, 176 (or 82 per cent.) of which were unsatisfactory, having an average germination of 56 per cent., and an average purity of 90·5 per cent.

The 309 samples of Italian Ryegrass included 91 of only 16 lbs. bushel weight, 87 (or 96 per cent.) of which were unsatisfactory, having an average germination of only 45 per cent., and a purity of 93 per cent.

It has already been pointed out that in some cases the unsatisfactory nature of the sample is due to the seed having been kept over from a previous season or seasons by the shopkeeper.

Owing to the practically complete withdrawal from the market of the types of Perennial and Italian Ryegrass seeds below 20 lb. and 16 lb. per bushel respectively, there is no doubt but that there has been a very considerable improvement in the quality of grass seeds sold in Ireland during the past two years. Since the average germination of all the samples of 20 lb. Perennial (215) and of 16 lb. Italian (91) tested under the Act during the year was only 59 per cent. and 46 per cent. respectively, it would appear desirable to endeavour to get the sale of these low weights also discontinued.

From the following Table, which gives the average results of all the Act samples of the various kinds of clovers tested during the year, it will be seen that there is room for much improvement here.

Name.	No. Tested.	Average per cent. Germination.	Average per cent. Purity.
Red Clover . . .	134	73+6 hard seeds	93·9
White Clover, . . .	103	67+9 ,,	87·1
Alsike Clover, . . .	63	54+11 ,,	90 86
Trefoil, ...	41	59+8 ,,	97·93

There is also room for great improvement in the quality of much of the mangel seed offered for sale in the country. Out of twenty-three samples tested only six showed a germination of 100 per cent. or over, and the average was only 88 per cent. When it is remembered that the germination of a good sample of mangel seed should reach form 140 to 150 per cent. or more, the lowness of this average will be apparent.

(2) *Samples submitted by farmers, seed merchants and others.*—The sources of the samples tested (other than the " Act " samples just mentioned) were as follows :—

Samples submitted by farmers	622
,, ,, seedsmen	447
,, ,, Department's officers	222
,, connected with investigations	364
Total =	1,655

The following Table, compiled from the registers of the Seed Testing Station, shows the sources of the samples tested each year since its inception.

Year	Farmers	Merchants	Department's Officers	County Instructors	"Act"	Seed Investigation	Total
1900–1901, .		Details	not avail	able			488
1901–1902, .		Details	not avail	able			
1902–1903, .		Details	not avail	able			712
1903–1904, .	581	209	141	115	—	—	1,046
1904–1905, .	611	336	89	500	—	—	1,536
1905–1906, .	684	204	66	524	—	—	1,478
1906–1907, .	652	128	96	584	—	—	1,460
1907–1908, .	873	175	147	972	—	—	2,167
1908–1909, .	1,038	157	128	977	—	—	2,300
1909–1910, .	1,051	190	203	—	507	—	1,951
1910–1911, .	931	229	247	—	682	—	2,089
1911–1912, .	708	388	224	—	788	—	2,108
1912–1913, .	724	473	262	—	866	250	2,575
1913–1914, .	622	447	222	—	1,136	364	2,791

It will be observed that there has been a tendency during the past few years for the number of samples submitted by farmers to decrease, but for the number of those submitted by seed merchants to increase. The samples submitted by the County Instructors previous to 1909 correspond in source practically to those included under "Act" since that year.

In the following Table the samples received from farmers and seed merchants in Ireland during the past year are arranged according to the counties from which they were submitted.

Counties from which samples were submitted.

Antrim,	101	Limerick,	41
Armagh,	10	Londonderry,	48
Carlow,	45	Longford,	0
Cavan,	15	Louth,	59
Clare,	1	Mayo,	3
Cork,	223	Meath,	39
Donegal,	4	Monaghan,	19
Down,	36	Queen's,	1
Dublin,	61	Roscommon,	4
Fermanagh,	0	Sligo,	0
Galway,	4	Tipperary,	8
Kerry,	35	Tyrone,	73
Kildare,	22	Waterford,	20
Kilkenny,	16	Westmeath,	3
King's,	39	Wexford,	88
Leitrim,	1	Wicklow,	12

In addition to the above, thirty-eight samples were tested which came respectively from England (8), Scotland (18) and Holland (12). These samples were sent by seed merchants doing business in Ireland.

The following Table gives a summary of the results of the tests for purity and germination of the various kinds of seeds tested during the year. It does not, however, include all of the samples tested. Those connected with investigation work and a few others tested for special purposes are designedly omitted.

Name of Seed.	No. of Samples Tested.	Germination per cent.			Purity. per cent.		
		Average	Highest.	Lowest.	Average.	Highest.	Lowest.
Wheat, . .	45	89	100	6	99	100	97·7
Oats, . .	182	89	100	21	98·5	100	89·2
Barley, . .	112	93	100	25	09·7	100	97·4
Rye, . .	15	75	98	12	97	99·7	92·2
PerennialRyegrass	120	85	97	56	97·5	99·8	77·4
Italian Ryegrass,	111	82	06	60	98.5	100·0	93·9
Meadow Fescue,	36	93	99	59	97·5	99·9	58·9
Meadow Foxtail,	7	69	92	41	93·6	96·6	90·4
Timothy, .	44	91	98	79	98·9	99·9	94·4
Cocksfoot, .	53	83	96	49	96·0	99·6	83·4
Crested Dogstail,	9	85	95	75	98·8	99·9	97·3
Red Clover, .	101	91+4 h	99	36+2 h	97·6	100·0	89·8
White Clover, .	44	82+9 h	96+2 h	55+9 h	94·8	98·8	82·5
Alsike Clover, .	48	84+9 h	95+3 h	59+9 h	96·0	99·8	85·4
Trefoil, . .	9	79+7 h	08+2 h	55+2 h	09·1	99·7	98·4
Swede, . .	40	92	99	82	99·7	100·0	97·5
Turnip, . .	10	91	99	74	99·4	100·0	98·8
Rape, . .	2	96	96	95	99·4	99·4	99·4
Cabbage, . .	5	68	81	57	99·3	99·7	98·9
Mangel, . .	39	109	165	51	100·0	100·0	100·0
Flax, . .	225	90	100	34	98·5	99·9	90·7
Vetches, . .	15	96	100	90	97·1	99·4	92·6

h=hard seeds.

The following notes on the principal classes of seeds tested may be of interest.

CEREALS.—As regards purity, the samples of cereals left practically nothing to be desired, except in the case of one sample of rye from a merchant in County Kerry, which contained nearly eight per cent. of impurities, chiefly broken grains. One sample of "bunted" wheat was received from a farmer in County Carlow. Eighteen samples of barley were submitted for examination for genuineness or trueness to name by the Department's cereal specialist.

In respect of germination the results were not so good. There were three very bad samples of *wheat* from farmers in Counties Carlow, Wexford, and Armagh, which germinated only 40, 12, and 6 per cent. respectively. In the last case the farmer had sown his seed before having it tested, and the result was, of course, failure.. There were nine other samples of wheat with a germination below 90 per cent, but with these exceptions the samples were quite satisfactory.

About one-third of the samples of *oats* tested were more or less unsatisfactory in germination, some of them being quite unfit for sowing. The two worst samples, having germination percentages of only 25 and 21 respectively, were submitted by a merchant from County Kerry.

The germination of the *barley* samples was distinctly better than that of the oats or wheat. There were two very bad sample from farmers in Counties Tipperary and Carlow, which germinated only 36 and 25 per cent. respectively. In addition, there were some half-dozen other samples of seed, the value of which for sowing was very doubtful.

Not many samples of *Rye* were tested, but more than one half of them were unsatisfactory. The worst sample, submitted by a farmer in County Carlow, germinated only 12 per cent. Three unsatisfactory samples were received from merchants in County Kerry, while one, suspected to be inferior by a County Instructor in Agriculture, germinated only 31 per cent. In view of the increasing use of rye for catch cropping, and of the fact that much of this seed offered for sale in Ireland is of unsatisfactory quality and in many cases quite unfit for sowing, it is of the utmost importance that the seed of this cereal should be tested before being purchased or sown. The average germination of the samples of rye submitted for testing during the last twelve years only reaches the very unsatisfactory figure of 68 per cent.

RYEGRASSES.—The purity of the samples of Perennial and Italian Ryegrasses was very satisfactory except in two cases of Perennial having purity percentages of only 89 and 77·4 respectively. One sample of Perennial Ryegrass from County Meath germinated at the very unsatisfactory figure of 56 per cent., but otherwise the germination of the ryegrass seeds was, on the whole, satisfactory, and was an improvement on that of the previous season.

OTHER GRASS SEEDS.—There were two very unsatisfactory samples of *Meadow Fescue*—one from a farmer in Kerry, adulterated with the cheaper Perennial Ryegrass seed and having a purity of only 58 per cent., and the other from a farmer in County Tyrone which germinated only 59 per cent. Very few samples of *Foxtail* were tested, but one gave the excellent result of 92 per cent. germination. Two were unsatisfactory, germinating only 51 and 41 per cent. respectively.

The samples of *Timothy* were, on the whole, satisfactory, although there were a few which undoubtedly consisted of old seed and in which the germination was low. During recent years there has been much improvement in the quality of the *Cocksfoot* seed tested at the Seed Testing Station, and the samples of this seed tested during the past eason were on the whole satisfactory with three exceptions, which showed germinations of only 64 per cent., 62 per cent., and 42 per cent. respectively. The purity of the samples of *Crested Dogstail* was satisfactory, but in only two of them was the germination really first class.

CLOVERS.—Taken as a whole, the purity and germination of the samples of *Red Clover* must be regarded as very satisfactory, and the steady improvement in the quality of this seed which has taken place during recent years was well maintained. There were only two very bad samples, from farmers in Counties Kerry and Cork, germinating only 47+2 hard seeds per cent. and 36+2 hard seeds per cent. respectively. An improvement is also noticeable in the case of *White* and *Alsike Clovers*, but there is still room for more. Too many of the samples of these seeds which consist of fresh seed mixed with that of previous seasons are still received. *Trefoil* seed is not much used in Ireland, and the number of samp'es tested was but few, and only two of them were really first class. The records of past seasons show that, as a rule, the samples of this seed have been by no means satisfactory.

"ROOTS."—The purity and germination of these seeds were, as is usually the case, quite satisfactory with the exception of one or two samples of mangels.

About a dozen samples of *Flax* germinated unsatisfactorily, being below 80 per cent. One very bad sample from a seed merchant in County Monaghan only germinated 34 per cent. Some of the samples of *Vetches* were not as well cleaned as they should have been, but the germination in all cases was good.

SUMMARY OF PROCEEDINGS IN CONNECTION WITH THE BEE PEST PREVENTION (IRELAND) ACT, 1908.

The principal provisions of this Act and the manner of its administration are described in last year's Report.

The returns received from local authorities showed that during the period from 1st October, 1913, to 30th September, 1914, 291 cases of Foul Brood were reported by the Inspectors appointed for the purpose of the Act, and were suitably dealt with. Twenty-seven of the 33 County Committees of Agriculture allocated funds as shown in the following Table for the payment of compensation to bee-keepers in respect of bees compulsorily destroyed under the Act during the year ended the 30th September, 1914.

Antrim,	£20	
Armagh,	5	
Cavan,	15	
Cork,	20	(limited to persons £5 valuation and under)
Down,	10	
Fermanagh,	5	
Galway,	10	
Kerry,	5	
Kildare,	10	
Kilkenny,	10	(limited to persons £5 valuation and under)
King's	10	
Leitrim,	5	
Limerick,	10	
Londonderry,	5	
Longford,	1	
Louth,	5	
Mayo,	5	
Meath,	10	
Monaghan,	5	
Queen's,	5	
Sligo,	3	
Tipperary N.R.,	5	
„ S.R.,	10	
Tyrone,	10	
Westmeath,	5	
Wexford,	30	(limited to beekeepers under £30 valuation)
Wicklow,	5	(limited to persons of £5 valuation and under)

Payment of compensation amounting in all to £26 *7s. 6d.* was recommended in thirteen counties during the year ended 30th September, 1914. Very little difficulty was experienced during the year in the administration of the Act, and in no case was it found necessary to have recourse to legal proceedings.

AMERICAN GOOSEBERRY MILDEW AND BLACK CURRANT MITE (IRELAND) ORDER, 1912.

Inspection of Gardens and Nurseries.—During the year 1914, in addition to the usual inspections made by the County Instructors in Horticulture, a large number of special inspections were carried out by officers of the Department in districts or in counties where the Instructors' reports had indicated that the diseases dealt with by the Order were prevalent. In consequence, the number of fresh cases reported for the period was much above the average for the preceding five years. The figures for the year under review are set out beneath.

TABLE SHOWING THE NUMBER OF FRESH CASES OF AMERICAN GOOSEBERRY MILDEW AND BLACK CURRANT MITE REPORTED DURING THE CALENDAR YEAR 1914.

County.	American Gooseberry Mildew.	Black Currant Mite.	County.	American Gooseberry Mildew.	Black Currant Mite.
Antrim,	92	125	Londonderry,	52	21
Armagh,	107	9	Longford,	—	—
Carlow,	5	—	Louth,	48	2
Cavan,	2	1	Mayo,	—	—
Clare,	—	—	Meath,	99	8
Cork,	—	16	Monaghan,	77	—
Donegal,	1	—	Queen's,	2	—
Down,	274	24	Roscommon,	—	—
Dublin,	44	79	Sligo,	—	—
Fermanagh,	1	—	Tipperary N.R.,	3	4
Galway,	—	—	Tipperary S.R.,	7	2
Kerry,	—	—	Tyrone,	5	—
Kildare,	6	—	Waterford,	13	4
Kilkenny,	7	7	Westmeath,	7	—
King's,	2	—	Wexford,	8	1
Leitrim,	2	—	Wicklow,	22	2
Limerick,	—	—			
			TOTALS,	868	305

Special inspections were made by the Department's officers in the counties of Antrim, Armagh, Dublin, Meath, Monaghan, and Down. Particular attention was devoted to the market-gardening areas of each of the five first-named counties, and the figures for each of them are, therefore, high. In some counties American Gooseberry Mildew has not yet made its appearance; and in County Cork, where the area under gooseberries is very considerable, not a single case of the disease was reported during the year.

The comparatively large number of Black Currant Mite cases reported in County Dublin is due to the fact that all gardens within half-a-mile radius of some of the principal nurseries were inspected, and in many of these gardens a few old and infected bushes were found growing.

For the most part the measures required under the Order were carried out by occupiers without much reluctance or delay, but in some areas a degree of difficulty was experienced in securing the destruction of bushes, and legal proceedings had to be instituted. Nine prosecutions of this kind were necessary in County Armagh, where the magistrates invariably held that offences against the Order were a serious menace to the fruit-growing industry in the county. Convictions were obtained in all these cases, the penalty imposed in the majority of them being £2 and £1 costs. There were twelve prosecutions in the Balbriggan district in County Dublin, and seven in the Gormanstown district in County Meath. It is satisfactory to note that the number of prosecutions necessary to enforce the requirements of the Order was only forty-nine, a figure which represents about *four per cent.* of the total number of cases dealt with.

Every effort was made to make the provisions of the Order as widely known as possible, and with this object a poster (Appendix No. XIV.) was exhibited at most of the police stations in the country during June and July.

Owing to the unsatisfactory observance of the provisions of the Order with respect to the notification of disease and the sale of diseased bushes by nurserymen, the Department found it necessary to bring the matter directly under their notice in a circular letter (Appendix No. XV.) issued in May. It was felt that the greatest harm could be done by the sale of diseased bushes from a nursery, and that this was one of the readiest ways of spreading disease.

The requisite steps to prevent the sale of diseased fruit were also taken. A warning (Appendix No. XVII.) was issued to salesmen in the fruit markets of Dublin, Belfast, and Cork, and during the fruit season these markets were regularly visited by officers of the Department and the fruit exposed for sale inspected.

BLACK SCAB IN POTATOES ORDERS.

The disease of Black Scab in potatoes is not found anywhere in Ireland with the exception of two small and isolated areas in County Down. Very stringent regulations have been made to eradicate the disease in these areas, which comprise the district in the immediate neighbourhood of Kilkeel lying between the sea and the Mourne Mountains and the southern portion of the Ards peninsula.

Black Scab in Potatoes (Special Area—Ireland) Orders, 1913; 1914 (*Order No.* 1), 1914 (*Order No.* 2).—As mentioned in last year's Report, the first of these Orders was made in December, 1913. Under the provisions of this Order the Kilkeel area in County Down was constituted a scheduled district, out of which potatoes could not be moved without licence, or, in a the case of potatoes being moved by sea, without a certificate that the potatoes had been examined and found free from disease. Potatoes could not be planted again within this scheduled district until at least five years had elapsed since the ground was previously cropped with potatoes. It was further provided that potatoes grown within the scheduled district should not be used for seed purposes outside that district. The scheduled district consisted of the whole of the area bounded on the one side by the sea and cut off from the rest of the county on the land side by the chain of the Mourne mountains. Within this district there are two small areas in the neighbourhood of Kilkeel and Greencastle in which cases of the disease were found. These were constituted under the Order "prohibited areas." In these two areas the regulations imposed are much stricter. Potatoes can neither be moved from any field or pit or shed, nor planted, nor dug, without a licence from an officer of the Department: Potato stalks and leaves, etc., cannot be moved out of the field on which potatoes are grown, but must be there destroyed either by burning or by ploughing into the ground. The use of uncooked potatoes, or potato skins, or any material of that nature for manure is prohibited. Potatoes grown in the prohibited areas cannot be used for seed even in the prohibited areas. Early in the spring of 1914, the Department found it necessary to supplement the 1913 Order with a further Order in regard to the use of certain materials as manure. It was a common practice in the prohibited areas to use as manure cinders and ashes and contents of ash-pits and usual town refuse. The use of these materials was constituting a considerable amount of traffic between garden and garden, which it was desirable to stop as far as possible; and there was, further, what appears to be a well-founded idea that the use of certain classes of town refuse was favourable to the spread of the disease. Accordingly, in the new Order that was made, the use in the scheduled district of any cinders or ashes or such like refuse coming from the prohibited areas was forbidden, and in the prohibited areas the use of any such materials was totally forbidden. Later in the year it was found that some further additions to the provisions of the Orders were desirable, and occasion was taken to amalgamate the two existing Orders under the title of the Black Scab in Potatoes (Special Area—Ireland) No. 2 Order, 1914. Under this Order two new provisions were included, one requiring occupiers of land to dig or pull up any "ground" potatoes therein, that is, potatoes which, having remained in the ground after a crop has been taken off it, sprout up in the succeeding year, and the other requiring persons who had planted potatoes without a licence or otherwise in contravention of the Order, to lift them on notice to that effect being given by an inspector or authorised person. Every effort was made to have the contents of these Orders thoroughly published through the whole district affected. For this purpose, copies of the orders were sent to every grower in the prohibited areas, residents in the small towns and villages, to the police stations, potato merchants, and shippers, and to the County Council and the County Committee of Agriculture. A poster was also issued in the district drawing the attention of residents to the provisions of the Order.

To facilitate growers in the districts as far as possible, the Department stationed four officers in Kilkeel, whose duties were to make inspections and to grant the necessary licences for moving or planting as the case might be The growers in the district were supplied with suitable application forms. The procedure established was that licences or certificates authorising the moving of potatoes out of the scheduled district were granted in the case of potatoes from outside the prohibited areas after inspection of the potatoes when about to be shipped, and in the case of potatoes grown in the prohibited areas, after inspections made at the time the potatoes were lifted and again when they were about to be sent from the holding on which they had been grown. In the prohibited areas a licence to plant was only granted when the ground on which the potatoes were to be planted had been examined and the seed which it was proposed to plant had been inspected. The form of licence given to the applicant only authorised the planting on the ground inspected and the planting of the seed inspected. Prior to the making of the 1913 Order a considerable number of growers had ground prepared for the planting of potatoes in the following year; in a number of these cases crops of potatoes had been grown on the ground within the previous five years. In these cases the Department allowed potatoes to be planted provided the land that had been prepared was situated outside a defined area comprising the prohibited areas and a certain portion of the scheduled district bordering on these areas. These are the only cases in which the Department allowed any land on the scheduled district to be replanted with potatoes unless five years had elapsed since the preceding planting. In order to guard against infringements of this regulation the Department's officers have taken note of all fields in the district which were planted with potatoes in 1914. During the year, 1,188 licences to plant and 329 certificates for the moving of potatoes were granted by the Department's officers. The total quantity of potatoes in respect of which licences to move were granted exceeded 25,000 tons.

On the whole, the Order was willingly and readily complied with, though at the beginning numerous protests were received from growers, and eventually a deputation approached the Department with a view to obtaining relaxation of the Order in some respects. The Department, however, succeeded in impressing on the deputation the extreme danger of the spread of the disease and the importance of taking every possible measure to guard against such. Though there are 1,500 growers of potatoes in the district, the Department found it necessary to institute prosecutions in 11 cases only. Eight of these cases were for planting potatoes without a licence, two for moving potatoes, and one for falsifying a licence. In all these cases, with the exception of the last, convictions were secured, fines imposed, and the magistrates threatened severe penalties for any further breaches of the Order. In addition, in some of the cases in which potatoes had been planted without a licence, the growers were compelled to lift the potatoes. In the case in which a licence given by the Department was altered by the licensee, the defendant proved to be a person of weak intellect, and was apparently unable to realise the serious nature of the offence he had committed. In these circumstances the Department agreed to the withdrawal of the case.

The Department's officers have mapped the whole district, so that a complete record will be available of every field in which potatoes were planted in 1914. This information, of course, will be necessary for the Department in future years for the execution of the Order.

Early in the autumn of 1914 the work of inspection of this district again started, and 13 cases of the disease were found as against 36 last year. It is to be hoped that the great reduction in the number of cases found this year means that the spread of the disease is being kept under control. In all these cases the usual notices under the Black Scab in Potatoes (Ireland) Order, 1908, were served on the growers, requiring them to burn the potato stalks and leaves, etc., and to deal with the crop as directed by the Department's Inspector. The crops in these cases have been pitted. The pits will be opened and inspected in the spring by the Department's officers.

The smooth working of the Order is largely due to the co-operation of the growers and of the shippers. The Department also take this opportunity to acknowledge the great help received by them from the Royal Irish Constabulary, who assisted them considerably by making known to growers the contents of the Order, and also keeping a watch for any infringements of its provisions.

Black Scab in Potatoes (Ireland) Order, 1908.—Further close examination of the Ards district was also made during the autumn. Six cases of the disease were found, as compared with five last year. In these cases notices similar to those in the Kilkeel area were served. The Department have under consideration the question of placing the district under similar restrictions as the Kilkeel district, and with these views the district has been already surveyed.

AGRICULTURAL BRANCH,
30th September, 1915.

APPENDICES.

APPENDIX I.

Return showing the names and addresses of the Agricultural Analysts under the Fertilisers and Feeding Stuffs Act in each County and County Borough in Ireland, and giving particulars of arrangements existing in some Counties whereby farmers and other residents in the County can have samples of manures and feeding stuffs analysed at a reduced fee.

County.	Name and Address of Analyst.	Special rates which have been notified to the Department at which samples of manures and feeding stuffs are tested for residents in the county.
Antrim,	T. R. Hodgson, M.A., F.I.C., Poulten-le-Fylde, Lancashire.	Nil.
Armagh,	J. Harold Totton, B.Sc., F.I.C., 76 Scottish Temperance Buildings, Donegall Square, South, Belfast.	Fertilisers and feeding stuffs at 2/6 per sample.
Carlow,	Sir Chas. A. Cameron, Chatham Row, Dublin.	Fertilisers and feeding stuffs at 3/6 per sample.
Cavan,	Do., do., do.	Guano and superphosphate, 5/–; potash, 5/–; feeding stuffs, 5/– per sample.
Clare,	Do., do., do.	Fertilizers and feeding stuffs at 2/6 per sample.
Cork,	D. J. O'Mahony, F.C.S., City Hall, Cork.	Nil.
Donegal,	Charles McMullan, F.I.C., 4 William Street Chambers, Belfast.	Fertilisers and feeding stuffs, 5/– per sample.
Down,	Sir Chas. A. Cameron, Chatham Row, Dublin.	Fertilisers, 2/6 per sample (2/6 extra for determination of potash); feeding stuffs, 2/6 per sample.
Dublin,	Do., do., do.	Nil.
Fermanagh,	Do., do., do.	Fertilisers and feeding stuffs, tested free.
Galway,	Do., do., do.	Nil.
Kerry,	D. J. O'Mahony, F.C.S., City Hall, Cork.	Fertilisers and feeding stuffs, 2/6 per sample.
Kildare,	Sir Chas. A. Cameron, Chatham Row, Dublin.	Do., do., do.
Kilkenny,	Do., do., do.	Nil.
King's,	D. J. O'Mahony, F.C.S., City Hall, Cork.	Fertilisers and feeding stuffs, 2/6 per sample.
Leitrim,	Sir Chas. A. Cameron, Chatham Row, Dublin.	Nil.
Limerick,	Do., do., do.	Fertilisers, 5/– (5/– extra for determination of potash); feeding stuffs, 5/– per sample.
Londonderry,	J. Harold Totton, B.Sc., F.I.C., 76 Scottish Temperance Buildings, Donegall Square, South, Belfast.	Fertilisers and feeding stuffs, 5/– per sample.

RETURN showing the names and addresses of the Agricultural Analysts under the Fertilisers and Feeding Stuffs Act in each County and County Borough in Ireland, and giving particulars of arrangements existing in some Counties whereby farmers and other residents in the County can have samples of manures and feeding stuffs analysed at a reduced fee.—*continued.*

County.	Name and Address of Analyst.	Special rates which have been notified to the Department at which samples of manures and feeding stuffs are tested for residents in the county.
Longford, .	Charles McMullan, F.I.C., 4, William Street Chambers, Belfast.	Superphosphates, 5/-; compound manures, 10/-; feeding stuffs, 7/6 per sample.
Louth, . .	Sir Chas. A. Cameron, Chatham Row, Dublin.	Fertilisers and feeding stuffs, 3/6 per sample.
Mayo, . .	Do., do., do.	Nil.
Meath, . .	Do., do., do.	Fertilisers and feeding stuffs, 2/6 per sample.
Monaghan, .	Do., do., do.	Nil.
Queen's, .	Do., do., do.	,,
Roscommon, .	Do., do., do.	Fertilisers and feeding stuffs, 2/6 per sample.
Sligo, . .	Do., do., do.	Samples of fertilisers and feeding stuffs analysed free.
Tipperary (N.),	Do., do., do.	Fertilisers and feeding stuffs, 3/6 per sample.
Tipperary (S.),	Do., do., do.	Fertilisers and feeding stuffs, 12/6 per sample.
Tyrone, .	Robert F. Blake, F.I.C., F.C.S., Scottish Provident Buildings, Donegall Square, W., Belfast.	Nil.
Waterford, .	Sir Chas A. Cameron, Chatham Row, Dublin.	Fertilisers and feeding stuffs, 2/6 per sample.
Westmeath, .	Do., do., do.	Do., do., do
Wexford, .	Do., do., do.	Do., do., do.
Wicklow, .	Do., do., do.	Do., do., do.
Co. Borough:		
Belfast, .	J. Harold Totton, B.Sc., F.I.C., 76 Scottish Temperance Buildings, Donegall Square, South, Belfast.	Fertilizers and feeding stuffs at 10/6 per sample.
Cork, . .	D. J. O'Mahony, F.C.S., City Hall, Cork.	Nil.
Dublin, .	Sir Chas. A. Cameron, Chatham Row, Dublin.	,,
Limerick, .	Do., do., do.	,,
Londonderry,	Professor Leebody, Magee College, Londonderry.	,,
Waterford,	Sir Chas. A. Cameron, Chatham Row, Dublin.	Fertilisers and feeding stuffs, 2/6 per sample.

APPENDIX II.

PARTICULARS of the names, addresses and occupations of the persons appointed by the Department to act as Official Samplers under the Fertilisers and Feeding Stuffs Act, 1906.

J. H. Hinchcliff, 4 Upper Merrion Street, Dublin, Agricultural Inspector.
E. Gallagher, do. do. do. do.
J. Pimlott do. do. do. do.
J. Johnston, do. do. do. do.
J. W. Steen, do. do. do. do.
J. L. Duncan, do. do. do. do.
P. McGovern, do. do. do. do.
W. J. Megaw, do. do. do. do.
J. Getty, do. do. do. do.
J. M. Adams, Agricultural Station, Clonakilty, Superintendent Agricultural Station.
R. Y. Smith, Agricultural Station, Athenry, Superintendent, Agricultural Station.
J. Marchbank, Agricultural School, Greenmount, Muckamore, Co. Antrim.
P. Taylor, Stranorlar, Co. Donegal, Agricultural Overseer.
D. S. Simpson, Prospect Avenue, Westport, do.
J. Kelly, Murphy's Hotel, Athenry. do.
Jerome Murphy, 32 Denny Street, Tralee. do.
T. Garvey, Assistant Agricultural Overseer, Headford.
D. McCarthy, do. do. Kilkee.
M. Tuite, do. do. Swinford.
G. Doolan, Dunmurry, Belfast, Horticultural Overseer.
P. T. O'Hare, 6 Lawnview Place, Ballymena, Agricultural Instructor, Co. Antrim.
J. Bradshaw, The Cottage, Deansbridge, Armagh, do., Co. Armagh.
J. Kelly, Pembroke Road, Carlow, do., Co. Carlow.
J. Hanly, Glenview, Cavan, do., Co. Cavan.
T. Healy, Courthouse, Ennis, do., Co. Clare.
J. Mahony, 13 Church Street, Ennis, do., do.
A. O'Sullivan, Barrack Street, Mallow, do., Co. Cork.
P. F. Moloney, Hosking's Hotel, Cork, do., do.
D. J. Curran, Kilbrogan Hill, Bandon, do., do.
J. Dick, 2 Sorrento Villas, Old Blackrock Road, Cork, do., do.
C. C. Maguire, Church Street, Kanturk, do., do.
T. Ward, County Office, Lifford, do., Co. Donegal.
W. D. Davidson, 13 Ashley Avenue, Belfast, do., Co. Down.
M. J. Mullally, 26 Borea Terrace, Rathfarnham, do., Co. Dublin.
W. O. Smyth, 2 Belmore Terrace, Enniskillen, do., Co. Fermanagh.
T. Cotter, Rosemary House, Galway, do., Co. Galway.
G. C. Kelly, Courthouse, Galway, do., do.
J. Scully, Main Street, Listowel, do., Co. Kerry.
D. O'Connell, Imperial Hotel, Killarney, do., do.
T. Wade, Glenville, Naas, do., Co. Kildare.
J. Lucey, Green's Bridge, Kilkenny, do., Co. Kilkenny.
D. T. Ritchie, 4 St. John's Mall, Birr, do., King's Co.
J. J. O'Sullivan, Bantry Cottage, Manorhamilton, do., Co. Leitrim.
M. J. O'Leary, The Square, Newcastle West, do., Co. Limerick.
M. Gleeson, Cussen's Hotel, Kilmallock, do., do.
D. R. Aiken, 6 Union Street, Coleraine, do., Co. Lon'derry.
J. Crowley, Courthouse, Longford, do., Co. Longford.
T. J. Gallagher, 6 Kincora Terrace, Dundalk, do., Co. Louth.
J. O'Callaghan, Newtown, Castlebar, do., Co. Mayo.
J. Duffy, Knox Street, Ballina, do., do.
N. Leitch, Scapemanus, Navan, do., Co. Meath.
E. Gallagher, Courthouse, Monaghan, do., Co. Monaghan.
J. W. Browne, c/o Mrs. Ruddin, Castleblayney, do., do.
D. Collins, 10 Market Square, Maryborough, do., Queen's Co.
C. J. McCarthy, Ledford Park, Boyle, do., Co. Roscommon.
P. Duffy, Main Street, Roscommon, do., do.
R. W. Parker, William Street, Sligo, do., Co. Sligo.
M. H. M'Donagh, 7 Castle Street, Roscrea, do., Co. Tipp. (N.R.)
C. O'Donovan, Kileheelan, Clonmel, do., Co. Tipp. (S.R.)
E. S. Daly, 47 High Street, Omagh, do., Co. Tyrone.
G. L. Henderson, Courthouse, Omagh, do., do.
P. O'Keeffe, Abbeyside, Dungarvan, do., Co. Waterford.
A. Scully, St. Finian's View, Military Rd., Mullingar, do., Co. Westmeath.
J. J. Brennan, Courthouse, Wexford, do., Co. Wexford.
A. Nolan, Bay View Road, Wicklow, do., Co. Wicklow.

APPENDIX III.

A. B. MEMO. No. 4.

Farmers are advised to consult their County Agricultural Instructor before buying any manure if they are in doubt as to its value; and as far as possible, to use the manures recommended by the Department for the various crops.

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

AGRICULTURAL BRANCH.

VALUATION OF ARTIFICIAL MANURES, 1915.

The following unit prices have been fixed by the Department for use *in comparing* the approximate commercial values of manures this season :—

Nitrogen	14/– per Unit.
Phosphates, soluble in water	1/11 „
*Phosphates soluble in citric acid	1/4 „
‡Bone phosphate	1/6 „
Potash	6/9 „

* The unit value of citric soluble phosphate in basic slag may be taken as 1*s*. 9*d*.

‡ In the case of compound manures no allowance should be made for insoluble phosphates unless from bone.

Owing to the war there is extreme difficulty in fixing unit prices which may fairly be expected to obtain throughout the season. In the event of any interference with supplies the prices may have to be changed, in which case the Department will revise the above figures.

The prospects of obtaining supplies of potash manures are extremely bad. It is likely, however, that in the early part of the season, at any rate, it can be purchased at 6*s*. 9*d*. per unit as fixed above.

As potash is now so scarce and dear the Department do not recommend farmers to apply it to oats, barley, wheat, meadow hay, turnips, or mangels. The Department, accordingly, advise farmers to use for these crops the mixtures set out below. They are practically identical with those recommended in Leaflet No. 17, with the exception that potash is omitted save for the potato crop. Whatever potash can be purchased should be applied to the potato crop, which more than any other will pay for an application of this manure. For the turnip crop the Department recommend farmers to distribute their farmyard manure over as much of the ground as possible, and to supplement this with superphosphate or basic slag instead of using dung more liberally on one portion of the ground and using only artificial manures on the remainder.

MANURES FOR VARIOUS CROPS.

1915 Season.

The following kinds and quantities of manures are recommended per statute acre :—

Oats or Barley.

A mixture of—
1 cwt. sulphate of ammonia,
3 cwt. superphosphate.

Wheat.

1 cwt. nitrate of soda applied in March or April.

Meadow Hay.

A mixture of—
1 cwt. nitrate of soda,
3 cwt. superphosphate.

The superphosphate should be applied in February and the nitrate of soda early in April, or, if mixed together, these manures should be applied immediately after mixing.

Potatoes.

1 cwt. sulphate of ammonia.
4 cwt. superphosphate,
and as much potash as can be procured up to 1 cwt. muriate or sulphate of potash, or 4 cwt. kainit.

Turnips.

(*a*) For land in good condition :—
    10–15 tons dung,
    4–6 cwt. superphosphate or basic slag.
(*b*) For land naturally poor or in low condition :—
    10–15 tons dung and a mixture of artificials, consisting of—
        1 cwt. sulphate of ammonia,
        4 cwt. superphosphate.

Mangels.

A dressing of 20 tons dung and a mixture of artificials consisting of—
2 cwt. sulphate of ammonia,
4 cwt. superphosphate,
4 cwt. salt.

These units are based on the present retail cash prices of manures of the highest class in Dublin and Belfast. When these units are multiplied by the respective percentages, in the analysis of a manure, and 10*s.* is added for mixing, the result will represent very nearly the *cash price* of one ton of the manure free on rail at Dublin or Belfast. To ascertain the corresponding price at any other place in Ireland, add the amount shown in the statement appended.

No one need pay more than these prices, and, in some instances manures can be bought at something less ; especially is this the case where farmers combine to bulk their orders, or where they buy the ingredients and mix for themselves.

The Department desire to point out that the above prices should not be applied to low grade manures which may be composed of waste organic substances and of phosphates in a form not readily available by plants. Such compounds are often of little, if any, agricultural value, and can be produced at a low cost compared with manures compounded from first-class materials like sulphate of ammonia, superphosphate, and the well-known potash salts of proved merit.

The figures in the following table are believed to be substantially accurate, but the Department accept no responsibility for any inaccuracies due to alterations in railway or canal rates or other causes.

The following are examples showing how manures may be valued by means of the unit prices given in this memorandum :—

1. Suppose a manure for potatoes is guaranteed to contain "3 per cent. nitrogen, 16 per cent. soluble phosphates, and 2 per cent. potash," its value at Manorhamilton would be reckoned thus :—

	£	s.	d.
Nitrogen, 3 per cent. @ 14/- per Unit =	£2	2	0
Soluble phosphates, 16 " @ 1/11 " =	1	10	8
Potash, 2 " @ 6/9 " =	0	13	6
Allowance for mixing, ... =	0	10	0
Special Allowance for Manorhamilton (see Statement appended) .. .. =	0	12	0
Value per ton at Manorhamilton =	£5	8	2

2. Suppose the guaranteed analysis is "14 per cent. soluble phosphates and 4 per cent. nitrogen," the value of the manure at Tuam would be reckoned thus :—

Soluble phosphates, 14 per cent. @ 1/11 per Unit =	1	6	10
Nitrogen, 4 " @ 14/- " =	2	16	0
Allowance for mixing, ... =	0	10	0
Special Allowance for Tuam (see Statement appended) .. .. =	0	9	6
Value per ton at Tuam =	£5	2	4

STATEMENT showing the amount § which must be added to the Price of Manures in Dublin or Belfast to represent the cost of the same Manures at the following places when purchased from a local merchant or in quantity direct from the manufacturers :—

A.	Per Ton.		Per Ton.	B.	Per Ton.
Abbeydorney	10/-	Ardsollus	10/6	Bagnalstown ..	7/3
Abbeyfeale	11/3	Arigna	11/3	Balbriggan	4/-
Abbeyleix	7/9	Arklow	5/6	Balla	11/-
Achill	11/6	Armagh	5/6	Ballaghadereen ..	10/9
Adare	9/-	Armoy	7/6	Ballina	7/6
Adoon	11/3	Arva Road	8/9	Ballynahinch (Co. Galway). ..	11/-
Aghada	4/-	Askeaton	9/9	Ballinamallard ..	8/9
Aghadowey ..	6/6	Athboy	5/6	Ballinamora ..	11/3
Aghalee	3/9	Athenry	7/6	Ballinamore (Donegal). ..	8/9
Aldergrove	4/6	Athlone	6/3	Ballinascarty ..	6/3
Anneghmore ..	5/3	Athy	5/6	Ballinasloe	7/3
Antrim	16/6	Attanagh	7/9	Ballinass	8/9
Ardagh	9/9	Attymon	8/9	Ballincollig	3/3
Ardara Road ..	11/-	Augher	8/3	Ballinderry	3/6
Ardee	4/6	Aughnacloy ..	7/9	Ballindine	11/3
Ardfert	9/6	Aughrim (Wicklow)	4/9	Ballindrait	5/-
Ardglass	5/3	Auniscaul	1 /9		
Ardrahan	9/9	Aylwardstown ..	3/6		

§ These amounts, which in the majority of cases are not the actual rates of carriage per ton from Dublin or Belfast, are arrived at by ascertaining the difference between the cost price of one ton of manure free on rail at Dublin or Belfast and the cost of a ton of manure of the same quality imported at the nearest or cheapest port and adding to that difference the cost of conveyance per ton from that port to the buyer's station.

	Per Ton.
Ballineen	6/3
Bellinglen	5/9
Bellingrane	9/3
Bellinhassig	3/3
Ballinlough	10/6
Ballinrobe	11/9
Ballintogher	9/3
Bellintra	10/–
Bellybay	8/6
Ballybeg	5/6
Ballybofey (Stranorlar).	6/3
Ballyboley	6/–
Bellybrophy	6/3
Ballybunion	12/6
Ballycar	10/3
Ballycarry	4/–
Ballycastle (Antrim)	7/6
Ballyclare	2/6
Ballyclare Juno.	3/–
Ballyconnell	9/9
Bellycullane	4/6
Bellycumber	7/3
Ballydehob	8/9
Ballyduff (Cork)	6/6
Ballygawley	8/–
Ballyglunin	9/–
Ballygowan	2/3
Ballyhack	4/–
Bellyhaise	8/9
Bellyhale	4/9
Ballyhaunis	10/9
Ballyhooley	6/3
Ballyliffin	6/–
Ballylongford	11/3
Ballymagan	4/9
Ballymagorry	4/–
Bellymartle	4/3
Bellymena	5/3
Ballymoe	10/–
Bellymoney	5/9
Ballymore	3/9
Ballymote	10/3
Ballynahinch (Co. Down).	4/–
Ballynahinch Juno. (Co. Down).	3/3
Bellynashee	6/6
Ballynoe	5/3
Ballynure	6/–
Ballyragget	7/6
Ballyroney	5/6
Ballyshannon	10/–
Ballysodare	8/3
Ballyvary	10/6
Ballyward	5/6
Ballywillan	8/0
Ballywilliam	6/–
Baltimore	9/3
Baltinglass	6/–
Banagher	7/3
Banbridge	4/6
Bandon	5/–
Bangor (Down)	2/–
Bansha	8/–
Banteer	6/6
Bantry	8/6
Barnagh	10/6
Batterstown	3/6
Bawnboy	11/3

	Per Ton.
Beauparc	4/3
Bective	5/–
Belcoo	12/6
Bellarena	5/–
Belleek	10/3
Bellurgan	6/6
Belmont	6/–
Belmullet	11/3
Belturbet	9/–
Bennett's Bridge	5/9
Beragh	7/6
Besebrook	6/0
Birdhill	10/3
Blackrock (Cork)	3/3
Blackwatertown	5/6
Blarney	3/–
Blessington	3/3
Boher	9/9
Borris	7/–
Boyle	10/–
Bray	2/6
Bridge End	3/3
Bridgetown (Wexford)	6/0
Brittas	2/9
Brookeboro'	9/3
Brookmount	3/–
Bruckleee	9/6
Bruree	7/6
Bunbeg	8/9
Buncrana	4/3
Bundoran	10/3
Bundoran Junc.	8/6
Burnfoot	3/6
Burton Port	6/9
Bush	6/6
Buttevant	6/–
C.	
Cahir	7/–
Cahirciveen	11/3
Caledon and Tynan	5/9
Camolin	6/3
Campile	3/3
Capecastle	8/–
Cappagh	6/9
Cappoquin	7/3
Caragh Lake	11/3
Carberry	5/6
Cargan	9/6
Carlingford	6/3
Carlow	6/9
Carndonagh	6/3
Carrickfergus	2/3
Carrichue	4/–
Carrickmacross	7/–
Carrickmore	7/6
Carriok-on-Shannon	8/6
Carrick-on-Suir	4/6
Carrigaholt	11/3
Carrigaline	3/9
Carrigaloe	4/–
Carrigans	4/–
Carrigrohane	3/–
Carrigtwohill	3/9
Carroll'e Cross	4/3
Carrowen	4/–
Carrowmore	9/9
Cashel	9/6
Cashelnagore	6/9
Castlebar	10/–
Castlebellingham	5/–

	Per Ton
Castleblayney	7/6
Castlecaldwell	10/–
Castleconnell	9/9
Castledawson	6/6
Caetlederg	7/3
Castlefinn	5/3
Castlegregory	11/–
Castlegregory Juno.	10/3
Castlegrove	10/6
Caetleisland	10/6
Caetlemaine	10/6
Castlerea	10/3
Castlerock	6/–
Castletown	7/–
Castletownberehaven	8/9
Castletownroche	6/–
Castlewellan	5/3
Cavan	9/–
Celbridge	2/9
Chapel	6/–
Charlemont	5/3
Charleetown	11/6
Charleville	6/9
Church Cross	10/–
Churcb Hill	6/–
Clady	5/–
Clara	7/3
Clare Castle	10/–
Claremorris	10/9
Clashganny	6/–
Clifden	10/6
Cloghan	7/9
Clogher	8/6
Clogbroe	3/3
Clonakilty	6/6
Clonakilty June.	5/6
Clondulane	6/–
Clonee	7/6
Clonmany	5/–
Clonmel	4/9
Clonsilla	1/9
Cloughjordan	8/–
Coachford	4/3
Coachford Junc.	3/3
Coagb (via Moneymore).	7/6
Coalisland	4/9
Colbinetown	5/6
Colebrook	9/3
Coleraine	3/9
Collooney	8/3
Comber	2/–
Convoy	5/9
Cookstown	7/6
Cookstown Juno.	4/9
Cootehill	9/3
Corbally	3/9
Corbet	5/–
Cork	1/3
Corofin	11/9
Courtmacsherry	6/3
Courtwood	5/3
Craigavad	2/–
Cratloe	10/3
Craughwell	9/–
Creeslough	6/9
Creighanroe	6/9
Crew	7/–
Crolly	6/9
Crookstown Road	4/3
Croom	8/–

	Per Ton.
Crossdoney	8/9
Crossgar	4/-
Crosshaven	4/6
Crossroads	7/9
Crumlin	4/-
Crusheen	11/6
Cullion	3/-
Culloville	6/9
Cullybackey	6/-
Culmore	1/3
Curry	11/-
D.	
Dalkey	3/-
Derryork	5/9
Dervock	7/-
Desert	6/-
Desertmartin	7/-
Devon Road	11/-
Dingle	10/-
Doagh	2/6
Donabate	3/3
Donaghadee	2/9
Donaghmore	6/6
Donamon	9/9
Donegal	7/9
Donemana	4/-
Donoughmore	4/3
Doonbeg	14/-
Dooniskey	4/9
Dooran Road	10/3
Downhill	5/9
Downpatrick	4/3
Draperstown	7/6
Drimoleague	7/9
Dripsey	3/9
Drogheda	1/3
Dromahair	10/3
Dromineer	7/3
Dromkeen	9/9
Dromod	9/-
Dromore (Down)	3/0
Dromore Road	8/-
Drumfries	5/3
Drumhowna	8/3
Drumree	3/9
Drumshambo	11/3
Drumsna	9/6
Drumsurn	5/6
Duleek	3/9
Dunadry	4/-
Dunboyne	2/6
Duncannon	4/-
Duncormick	5/6
Dundalk or D'dalk Junc.	3/9
Dundrum (Down)	5/3
Dundrum (Dublin)	2/-
Dundrum (Tipp.)	9/-
Dunfanaghy	8/9
Dunfanaghy Road	6/9
Dungannon	6/-
Dungarvan	6/3
Dungiven	6/-
Dungloe Road	6/9
Dunkineely	9/6
Dunlavin	5/3
Dunleer	4/-
Dunloy	7/-
Dunmanway	7/-
Dunsandle	9/6

	Per Ton.
Durrow	5/6
Durrus Road	8/6
E.	
Edenderry	3/6
Edermine Ferry	5/9
Edgeworthstown	7/9
Eglinton	3/-
Embankment	1/6
Emly	8/3
Emyvale Road	7/3
Enfield	4/9
Ennis	10/-
Enniscorthy	3/9
Enniskillen	9/-
Ennistymon	13/3
F.	
Fahan	3/9
Falcarragh Road	6/9
Farranaleen	6/6
Farranfore	10/-
Farrangalway	4/6
Fenit	8/9
Ferbane	6/9
Fermoy	5/9
Ferns	5/-
Fethard	6/6
Fiddown	4/-
Fintona	7/3
Fintown	8/3
Firmount	4/-
Fivemiletown	9/-
Float	7/9
Florencecourt	10/6
Foxford	9/6
Foxhall	6/3
Fox's Bridge	3/9
Foynes	10/-
G.	
Galway	5/-
Garvagh	6/6
Geashill	7/-
Gibbstown	5/6
Glanworth	6/-
Glarryford	6/6
Glasslough	6/9
Glenavy	4/-
Glenbeigh	11/6
Glenealy	3/6
Glenfarne	11/9
Glengariffe	8/6
Glenmaquin	5/9
Glenmore	7/6
Glenties	8/9
Glin (Kerry)	11/3
Glynn	4/6
Goold's Cross	9/-
Goraghwood	5/-
Goresbridge	6/9
Gorey	6/-
Gormanstown	4/-
Gort	10/3
Gortatlea	10/-
Gowran	7/-
Graigue	5/6
Grange	3/9
Grange Con	5/9
Greencastle	1/9
Greenisland	2/6

	Per Ton.
Greenore	6/3
Greystones	3/9
Groomsport	3/-
Gweedore	6/9
H.	
Hamilton's Bawn	5/3
Harristown	4/6
Haulbowline	4/-
Hazelhatch	2/9
Headford Junc.	8/6
Healy's Bridge	8/-
Helen's Bay	2/5
Hilden Siding	2/-
Hill of Down	5/5
Hillsborough	3/-
Hollyhill	10/3
Hollymount	11/6
Holywood	1/6
Horse and Jockey	7/3
Horseleap	7/6
Howth	2/9
I.	
Inch	5/3
Inch Road	3/6
Inniskeen	6/-
Inver	10/3
Irvinestown	8/9
J.	
Jordanstown	2/3
K.	
Kanturk	6/9
Katesbridge	5/3
Keady	5/6
Kells (Ballymena)	8/9
,, (Meath)	6/-
,, (Kerry)	14/3
Kellswater	5/3
Kenmare	7/3
Kesh	9/3
Kilbeggan	7/5
Kilcock	3/9
Kilcoe	10/6
Kilcool	3/3
Kilcrea	3/9
Kildare	5/-
Kildysart	11/3
Kilgarvan (Kerry)	9/6
Kilgarvan (Tipp.)	7/9
Kilkee	14/-
Kilkenny	6/3
Killagan	0/9
Killala	9/-
Killaloe	9/5
Killarney	9/-
Killeagh	5/3
Killeshandra	9/-
Killinick	6/-
Killorglin	10/6
Killough	5/3
Killucan	5/3
Killurin	6/-
Killybegs	9/6
Killygordon	6/-
Killylea	6/-
Kilmacow	3/3
Kilmacrennan	7/-

	Per Ton.
Kilmacthomas ..	4/6
Kilmainham Wood	6/6
Kilmallock	7/6
Kilmeaden	3/9
Kilmessan	4/6
Kilmorna	11/6
Kilmurry (Cork) ..	4/-
,, (Clare) ..	14/9
Kilrane	5/-
Kilrea	7/-
Kilroot	3/3
Kilrush	11/3
Kilsheelan	5/6
Kiltimagh	12/-
Kilumney	3/6
Kingscourt	6/9
Kinsale	5/3
Kinsale Junc. ..	4/-
Knockanally ..	7/-
Knockcroghery ..	9/3
Knocklong	8/-
Knockloughrim ..	7/-
Kylemore	8/-
L.	
Labasheeda.. ..	11/3
Laffan's Bridge ..	7/-
Laghey	10/-
Lahinch	14/-
Lanesborough ..	8/-
Larne	4/6
Larne Harbour ..	4/9
Laurencetown ..	4/9
Laytown	3/9
Leighlinbridge ..	7/9
Leitrim	5/6
Leixlip	2/9
Letterkenny ..	5/9
Levittstown ..	6/-
Leyny	9/3
Limavady	4/9
,, Junc. ..	4/3
Limerick	7/6
,, Junc. ..	7/6
Lisbellaw	9/3
Lisburn	2/-
Liscooley	5/9
Lisduff	8/9
Liselton	14/6
Lismore	7/3
Lisnagry	9/9
Lisnaskea	9/-
Lispole	12/0
Listowel	11/6
Lixnaw	10/9
Lombardstown ..	6/-
Londonderry ..	1/3
Longford	8/3
Leo Bridge	9/-
Loughgilly	6/6
Loughrea	9/9
Lowtown	4/3
Lucan	2/6
Lurgan	3/9
Lusk	3/3
Luska	7/3
M.	
Maam Cross ..	9/9
Macfin Junc. ..	6/0
Macmine Junc. ..	6/6

	Per Ton.
Macroom	5/3
Madore	8/3
Mageney	6/-
Maghera	7/3
Magherafelt ..	6/9
Magheramorne ..	4/6
Magilligan	5/6
Maguiresbridge ..	9/-
Malahide	2/3
Malin Head ..	6/3
Mallaranny ..	11/0
Mallow	5/6
Manorcunningham	5/-
Manorhamilton ..	12/-
Markethill	6/6
Maryboro'	6/3
Maynooth	3/-
Middleton	3/6
Middletown (Armagh)	6/3
Milford (Carlow) ..	6/9
,, (Donegal) ..	8/9
Millstreet	7/3
Milltown (Tuam) ..	10/9
Milltown-Malbay ..	14/-
Mitchelstown ..	6/9
Moate	7/9
Mogeely	4/6
Mohill	11/3
Moira	3/3
Molahiffe	10/-
Monaghan	6/3
Monaghan Road ..	8/9
Monasterevan ..	4/9
Moneymore ..	7/3
Monkstown (Cork) ..	4/-
Moorfields	8/3
Morley's Bridge ..	9/3
Mountain Stage ..	13/6
Mountcharles ..	8/6
Mountmellick ..	5/9
Mountpleasant ..	6/-
Mountrath	7/9
Mountshannon ..	9/9
Mourne Abbey ..	4/9
Moville	5/-
Moy	5/3
Moycullen	6/9
Muckamore ..	3/9
Mullafarnaghan ..	4/3
Mullinavat	3/9
Mullingar	6/6
Mulroy	8/[illegible]
Multyfarnham ..	7/-
N.	
Naas	3/6
Navan	4/6
Nenagh	7/3
Newbliss	8/6
Newbridge	4/3
Newbuildings ..	3/3
Newcastle (Down) ..	5/3
Newcastle West ..	10/-
Newcastle (Wicklow)	3/3
Newmarket (Cork)	7/3
Newport (Mayo) ..	9/3
Newport Trench ..	4/3
New Ross	3/9
Newry	3/9
Newtownards ..	2/-
Newtownbutler ..	8/6

	Per Ton
Newtowncunningham	4/-
Newtownforbes ..	8/6
Newtownstewart ..	6/-
Nobber	6/3
O.	
O'Brien's Bridge ..	10/6
Oldcastle	7/3
Omagh	6/9
Omeath	6/6
Oola	9/-
Oranmore	6/6
Oughterard ..	8/-
Ovoca	4/3
P.	
Palace East ..	5/9
Pallas	9/3
Parkmore	8/3
Parsonstown ..	7/3
Passage West ..	3/9
Patrick's Well ..	8/6
Peake	4/-
Pettigo	9/9
Philipstown ..	5/9
Pluck	5/3
Pomeroy	7/-
Portadown	3/9
Portarlington ..	5/-
Portglenone ..	5/9
Porthall	4/-
Portrush	3/9
Portsalon	8/9
Portstewart ..	5/6
Portumna	8/3
Poulaphouca ..	3/9
Poyntzpass ..	5/9
Q.	
Queenstown ..	4/3
Queenstown Junc. ..	3/6
Quilty	14/3
Quin (See Ardsollus)	
R.	
Raffeen	3/9
Rahan	6/3
Ramelton	6/3
Randalstown ..	5/-
Raphoe	5/3
Rathangan	5/3
Rathdrum	3/3
Rathduff	4/-
Rathfriland ..	9/-
Rathkeale	9/6
Rathkenny	7/3
Rathmore	8/-
Rathmullen ..	6/3
Rathnew	3/3
Rathvilly	6/3
Recess	10/6
Red Gap	11/3
Redhills	8/9
Retreat	8/3
Rhoda Bridge ..	4/-
Richhill	5/3
Ringaskiddy ..	4/-
Robertstown ..	4/3
Rochestown ..	3/3
Rockcorry	8/6
Rooskey	7/-

	Per Ton.
Roscommon	9/9
Roscrea	8/6
Ross	7/9
Rosslare	6/3
Rossmore	8/3
Rossnowlagh	10/3
Rush and Lusk	3/3
Rushbrook	4/-
S.	
St. Anne's	3/-
Saintfield	2/9
St. Johnston	3/6
St. Mulline	5/6
Sallins	3/6
Sallybrook	5/-
Scariff	9/9
Soarva	5/6
Schull	8/9
Sbankill	2/6
Shannon Bridge	8/-
„ Harbour	6/6
Shillelagh	6/3
Sion Mills	5/-
Sixmilebridge	10/-
Sixmilecross	7/9
Skerries	3/9
Skibbereen	8/6
Sligo	7/6
Smithborough	7/3
Sneam	10/-
Spa	9/6
Sparrowsland Sdg. (See Chapel)	
Spike Island	4/3
Staffordstown	5/9
Stewartstown	6/6
Strabane	3/6
Straffan	3/3
Stranocum	7/3
Stranorlar	6/3
Streamstown	7/6
Swinford	12/-
T.	
Tallaght	1/-
Tallow Road	6/9
Tanderagee	4/9
Tarbert	11/3
Templemore	6/3
Templepatrick	3/-
The Lamb (See Brittas)	
Thomastown	5/6
Thurles	6/9
Timoleague	6/9
Tinahely	5/9
Tipperary	8/3
Toomebridge	6/-
Tralee	7/6
Tramore	2/9
Trew and Moy	5/9
Trillick	8/3
Trim	5/-
Tuam	9/6
Tubber	10/9
Tubbercurry	9/9
Tullamore	5/6
Tullow	7/-
Tullymurry	5/-
Tynan	5/9
U.	
Upperlands	7/6
Upton	4/3
V.	
Valentia Harbour	11/3
Vernersbridge	5/5
Vicarstown	6/-
Victoria Bridge	5/3
Virginia Road	5/9
W.	
Warrenpoint	5/9
Waterfall	3/3
Waterford	1/3
Wellington Bridge	5/-
Westport	7/6
Westport Quay	7/6
Wexford	3/9
Whiteabbey	2/-
Whitehead	3/9
Wicklow	1/3
Wilkinstown	5/9
Woodenbridge	5/-
Woodlawn	9/5
Y.	
Youghal	5/6

January, 1915.

APPENDIX IV.

RETURN showing the Number of Samples of Fertilisers and Feeding Stuffs taken by the Agricultural Instructor for each County as Official Sampler, during the year ended 31st December, 1914.

County.	Number of Samples Taken.	
	Fertilisers.	Feeding Stuffs.
Antrim,	4	25
Armagh,	7	10
Carlow,	5	4
Cavan,	25	21
Clare,	10	12
Cork,	9	21
Donegal,	5	1
Down,	1	7
Dublin,	2	12
Fermanagh,	1	3
Galway,	7	3
Kerry,	11	15
Kildare,	2	4
Kilkenny,	31	44
King's,	2	7
Leitrim,	2	10
Limerick,	10	15
Londonderry,	8	14
Longford,	1	2
Louth,	7	6
Mayo,	1	9
Meath,	2	0
Monaghan,	0	2
Queen's,	3	8
Roscommon,	4	20
Sligo,	2	2
Tipperary (N.R.),	4	11
„ (S.R.),	6	11
Tyrone,	5	8
Waterford,	0	8
Westmeath,	0	8
Wexford,	4	22
Wicklow,	2	23
Totals,	183	368
Samples taken by persons other than Instructors,	72	168
Totals,	255	536

APPENDIX V.

RETURN giving particulars of a representative selection of Fertilisers analysed by the Department during the year ended 31st December, 1914.

Description of Fertiliser, and County in which sample was drawn.	G=Vendor's Guarantee. A=Result of Analysis.	Phosphates.				Nitrogen.	Potash.	Observations. P=Price charged per ton V=Commercial Value per ton calculated from figures given in A.B. Memo. No. 4, Valuation of Artificial Manures, 1914.				
		Total.	Water Soluble.	Citric Soluble.	Insoluble.				£	s.	d.	
Basic Slag.												
Limerick, .	G	—	—	34	—	—	—	P	3	2	6	
	A	—	—	34·03	—	—	—	V	3	7	8	
Longford, .	G	—	—	34	—	—	—	P	3	10	0	
	A	—	—	30·58	—	—	—	V	3	12	3	
Clare, . .	G	—	—	—	—	—	—	P	2	7	0	
	A	—	—	29·80	—	—	—	V	3	1	10	
Clare, . .	G	—	—	30	—	—	—	P	2	18	0	
	A	27·37	—	16·75	—	—	—	V	1	19	4	
Meath, . .	G	—	—	24	—	—	—	P	2	7	0	
	A	—	—	23·43	—	—	—	V	2	0	0	
Londonderry,	G	28	—	—	—	—	—	P		—		
	A	28·35	—	13·08	—	—	—	V	1	5	2	
Superphosphate.												
Kerry, . .	G	—	35	—	—	—	—	P	3	15	0	
	A	—	30·30	—	—	—	—	V	3	16	10	
Armagh, .	G	—	35	—	—	—	—	P	3	7	6	
	A	—	35·17	—	—	—	—	V	3	10	0	
Galway, .	G	—	26	—	—	—	—	P		—		
	A	—	29·46	—	—	—	—	V	2	19	0	
Nitrophosphate.												
Clare, . .	G	—	19	—	—	1·03	1·08	P	3	19	3	
	A	—	17·48	—	—	·97	1·14	V	3	11	8	Low in soluble phosphates.
Potassic Superphosphate.												
Kilkenny, .	G	—	23	—	3	—	4	P	3	11	6	
	A	—	27·51	—	—	—	3·75	V	4	1	1	
Sulphate of Ammonia.												
Kilkenny, .	G	—	—	—	—	19·75	—	P	14	15	0	
	A	—	—	—	—	19·94	—	V	15	14	0	
Kilkenny, .	G	—	—	—	—	19·75	—	P	15	9	0	
	A	—	—	—	—	20·80	—	V	16	8	8	
Nitrate of Soda.												
Dublin, . .	G	—	—	—	—	—	—	P	10	0	0	
	A	—	—	—	—	15·12	—	V	11	18	4	
King's, . .	G	—	—	—	—	15·50	—	P		—		
	A	—	—	—	—	14·52	—	V	11	10	7	Below guarantee.

APPENDIX V.—*Continued.*

RETURN giving particulars of a representative selection of Fertilisers analysed by the Department during the year ended 31st December, 1914.

Description of Fertiliser, and County in which sample was drawn.	G=Vendor's Guarantee. A=Result of Analysis.	Phosphates.				Nitrogen.	Potash.	Observations. P=Price charged per ton V=Commercial Value per ton calculated from figures given in A. B Memo. No. 4, Valuation of Artificial Manures, 1914 ·				
		Total.	Water Soluble.	Citric Soluble.	Insoluble.				£	s.	d.	
Raw Ground Phosphate.												
Kerry, . .	G	—	—	—	—	—	—	P		—		
	A	49·43	—	8·10	—	—	—	V		—		
Potato Manure.												
Galway, .	G	—	21	9	—	3·25	8	P	7	5	0	Good sample compounded according to Department's formula.
	A	—	21·32	—	—	3·38	8	V	7	1	6	
Donegal, .	G	—	91	2	—	3·25	8	P	7	8	4	Ditto.
	A	—	91·22	—	—	3·67	7·98	V	7	9	6	
Kerry, . .	G	—	21	2	—	3·25	8	P	7	8	8	Ditto.
	A	—	22·69	—	—	3·80	7·24	V	7	13	0	
Kilkenny, .	G	—	15	2	—	1·85	4	P	4	13	0	
	A	—	19·27	—	—	1·86	3·84	V	4	14	1	
Donegal, .	G	—	15	2	—	2·5	4·5	P	5	10	0	
	A	—	15·52	—	—	2·80	4·48	V	5	9	8	
Cavan, . .	G	—	17	—	2	1·05	3·5	P	4	7	6	
	A	—	19	—	—	1·78	3·8	V	4	8	7	
Cavan, . .	G	—	19	—	2	1·95	2	P	3	9	9	
	A	—	17·02	—	—	2·33	1·50	V	4	4	0	
Queen's Co., .	G	—	19	2	—	1·64	2·99	P	4	18	0	
	A	—	19·69	—	—	1·64	3·16	V	4	19	9	
Tipperary N.R.,	G	—	14	9	—	1·65	2·16	P	4	16	0	
	A	—	15·22	—	—	1·54	2·30	V	4	10	2	
Mayo, . .	G	—	21·57	—	—	·91	1·05	P	7	0	0	
	A	—	20·11	—	—	1·08	·45	V	3	16	0	Below guarantee in potash.
Turnip Manure.												
Galway, .	G	—	16	9	—	2·5	4·5	P	5	5	0	Good sample compounded according to the formula recommended by Dept.
	A	—	15·60	—	—	2·97	4·66	V	5	11	0	
Kerry, . .	G	—	16	2	—	2·5	4·6	P	5	5	0	Ditto.
	A	—	16·33	—	—	2·87	4·56	V	5	15	0	
Donegal, .	G	—	15	2	—	2·5	4·5	P	5	4	2	Ditto.
	A	—	15·78	—	—	2·27	4·46	V	5	11	4	
Mayo, .	G	—	16	2	—	2·5	3	P	5	12	6	
	A	—	18·75	—	—	2·70	4·72	V	5	11	0	
Kilkenny, .	G	—	20	2	—	·82	1·08	P	4	10	0	
	A	—	21·64	—	—	·23	1·35	V	3	16	10	
Roscommon, .	G	—	21	—	2	1·03	1·62	P·		—		
	A	—	19·71	—	—	·54	2·57	V	3	12	4	

Appendix V.—*Continued.*

Return giving particulars of a representative selection of Fertilisers analysed by the Department during the year ended 31st December, 1914.

Description of Fertiliser and County in which sample was drawn.	G=Vendor's Guarantee. A=Result of Analysis.	Phosphates.				Nitrogen.	Potash.	Observations. P=Price charged per ton V=Commercial Value per ton calculated from figures given in A. B. Memo. No. 4. Valuation of Artificial Manures, 1914.				
		Total.	Water Soluble.	Citric Soluble.	Insoluble.				£	s.	d.	
Mangel Manure.												
Donegal,	G	—	10	2	—	3·75	4·75	P	6	0	0	Good sample compounded according to the formula recommended by Dept.
	A	—	10·05	—	—	4·00	5·24	V	0	2	8	
Galway,	G	—	10	2	—	3·75	4·75	P	5	15	0	Good sample made up according to Department's formula.
	A	—	10·47	—	—	3·80	4·80	V	5	15	6	
Kerry,	G	—	10	2	—	3·75	4	P		—		
	A	—	12·15	—	—	3·67	4·04	V	0	0	4	
Limerick,	G	—	15	2	—	1·04	3·51	P	5	10	0	
	A	—	18·15	—	—	1·62	3·70	V	4	15	3	
Cork,	G	—	15	—	2	1·65	3·51	P	5	0	0	
	A	—	10·05	—	—	1·00	3·08	V	4	2	1	
Oat and Grass Manure.												
Galway,	G	—	13	2	—	2·75	5	P	5	5	0	Ditto.
	A	—	13·20	—	—	2·76	5·10	V	5	5	0	
Donegal,	G	—	13	2	—	2·75	5	P	5	12	0	Ditto.
	A	—	13·85	—	—	3·21	5·42	V	5	10	5	
Cavan,	G	—	18	—	2	2·05	1·08	P	4	5	0	
	A	—	18·31	—	—	2·43	1·14	V	4	6	5	
Mayo,	G	—	21·5	—	—	·08	1·11	P	5	10	0	Low in Potash
	A	—	22·02	—	—	·03	0·46	V	3	18	9	
Donegal,	G	—	13	2	—	2·75	5	P	5	5	5	
	A	—	12·94	—	—	3·25	4·82	V	5	12	0	
Barley and Oat Manure												
Kilkenny,	G	—	15	2	—	3·30	4	P	0	10	0	Below guarantee in nitrogen.
	A	—	17·50	—	—	2·06	3·98	V	5	8	11	
Corn & Barley Manure.												
Cavan,	G	—	18	—	2	2·05	1·08	P	4	5	0	
	A	—	18·15	—	—	2·20	1·06	V	4	2	4	
Cavan,	G	—	17	—	2	1·80	2·7	P	4	8	0	
	A	—	10·27	—	—	1·87	2·78	V	4	6	10	
General Fertiliser.												
Waterford,	G	—	—	18	2	·41	—	P	3	15	0	
	A	—	13·04	1·72	—	·70	—	V	2	11	4	
Kilkenny,	G	—	—	18	2	0·41	—	P	3	17	0	Low in phosphates.
	A	—	—	15·22	—	0·52	—	V	2	3	2	
Special Manure.												
Kilkenny,	G	—	20	—	2	3·30	2·16	P	6	10	0	
	A	—	18·31	—	—	3·50	2·36	V	4	15	11	
Louth,	G	—	14	2	—	1·05	2·10	P	4	0	3	
	A	—	20·94	—	—	1·55	1·80	V	4	5	0	

APPENDIX V.—*Continued.*

RETURN giving particulars of a representative selection of Fertilisers analysed by the Department during the year ended 31st December, 1914.

Description of Fertiliser and County in which sample was drawn.	G=Vendor's Guarantee. A=Result of Analysis.	Phosphates.				Nitrogen.	Potash.	Observations. P=Price charged per ton. V=Commercial Value per ton, calculated from figures given in A. B. Memo. No. 4, Valuation of Artificial Manures, 1914.		
		Total.	Water Soluble.	Citric Soluble.	Insoluble.				£ s. d.	
Bone Manure. Galway,	G	25	20	—	—	1·03	—	P	—	
	A	—	20·96	—	5·80	1·18	—	V	4 0 4	
Wexford,	G	—	20	—	5	1·25	—	P	3 12 6	
	A	—	20·81	—	—	1·04	—	V	3 6 9	
Dissolved Bone Manure Kilkenny,	G	—	22	—	6	1·03	—	P	4 10 0	
	A	—	24·43	—	—	1·12	—	V	3 18 4	
Cavan,	G	—	18	—	5	6·39	1·08	P	8 7 6	
	A	—	18·85	—	5·55	6·23	1·10	V	7 14 0	
Cavan,	G	—	20	—	5	1·23	—	P	3 10 0	
	A	—	21·64	—	—	1·05	—	V	3 5 11	
Dissolved Guano. Sligo,	G	—	18	—	5	6·59	1·08	P	—	
	A	—	18·43	—	—	6·83	1·16	V	8 2 1	
Guano. Galway,	G	—	—	—	—	—	—	P	—	
	A	—	22·20	—	—	5·20	3·18	V	7 12 10	
Blood Manure. Clare,	G	25·53	21·50	—	—	·98	·6	P	3 12 6	Low in soluble phosphates and potash.
	A	—	17·34	—	—	·98	·46	V	3 5 4	

APPENDIX VI.

RETURN giving particulars of a representative selection of Feeding Stuffs analysed by the Department during the year ended 31st December, 1914.

Description of Feeding Stuff, and County in which sample was drawn.	G=Vendor's Guarantee. A=Result of Analysis.	Oil.	Albuminoids.	Price charged.	Observations.
Crushed Flaxseed.					
Antrim, . .	G	29·85	19·86	£8 10*s.* 0*d.* per ton	An inferior sample, contains 1·30 % sand.
	A	25·24	—		
Leitrim, . .	G	—	—	2/6 per st.	Pure
	A	34·54	—		
Kilkenny, .	G	—	—	2/6 per st.	Genuine.
	A	37·34	—		
Kilkenny, .	G	—	—	18/– per cwt.	Ditto.
	A	33·56	—		
Calf Meals.					
Tipperary, N.R.,	G	5	16	17/6 per cwt.	Contains rice meal, locust bean, linseed cake meal, a little maize and cotton seed; large numbers of mites.
	A	4·70	15·17		
Dublin, . .	G	10	20	15/– per cwt.	
	A	11·12	20·12		
Queen's, . .	G	7	20	16/8 per cwt.	Chiefly composed of linseed cake, meal, rice meal, locust bean meal, maize and pea meals. In good condition. Salt (Na Cl) present.
	A	7·65	19·7		
Queen's, . .	G	4	16	15/– per cwt.	
	A	5·13	16·45		
Kilkenny, .	G	12·92	13·57	13/6 per cwt.	
	A	12·52	13·12		
Kerry, . .	G	4·5	22	13/6 per cwt.	
	A	4·28	22·31		
Antrim, . .	G	6	18	12/– per cwt.	
	A	5·56	17·5		
Tipperary, N.R.,	G	10	17	2/6 per st.	Below guarantee in oil and albuminoids.
	A	8·95	14·00		
Armagh, .	G	—	—	12/– per cwt.	
	A	6·64	28·00		
Linseed Cake Meals.					
Limerick, .	G	9	30	10/6 per cwt.	Good sample of linseed cake meal.
	A	12·22	80·19		
Antrim, . .	G	8	30	£8 7*s.* 6*d.* per ton	Contains about 7 % weed seeds.
	A	—	—		
Antrim, . .	G	6	32	£8 per ton	Commercially pure.
	A	—	—		
Queen's Co., .	G	15	29	£7 17*s.* 6*d.* per ton	Ditto.
	A	15·35	29·59		
Kilkenny, .	G	9·5	30	12/– per cwt.	Ditto.
	A	11·99	28·30		

APPENDIX VI.—*Continued.*

RETURN giving particulars of a representative selection of Feeding Stuffs analysed by the Department during the year ended 31st December, 1914.

Description of Feeding Stuff, and County in which sample was drawn.	G = Vendor's Guarantee. A = Result of Analysis.	Oil.	Albuminoids.	Price charged	Observations.
Antrim, . .	G	6	32	£9 5s. 0d. per ton	Contains about 20 % of undecorticated earth nut cake meal.
	A	—	—		
Dublin, . .	G	6	32		Commercially pure.
	A	6.59	32·8		
Cotton Seed Meals.					
Antrim, . .	G	8	40	£8 10s. 0d. per ton	
	A	9·34	41·8		
King's Co., .	G	45 % oil & alb.		£8 10s. 0d. per ton	
	A	8·59	36·66		
Clare, . .	G	8	40	£9 10s. 0d. per ton	Commercially pure.
	A	—	—		
Kerry, . .	G	11	40	9/6 per cwt.	Contains nothing foreign to cotton seed. Quality inferior.
	A	—	—		
Antrim, . .	G	8	40	£8 7s. 0d. per ton	Inferior sample. It contains a large amount of "wool."
	A	9·09	34·12		
Pig Meals.					
Kilkenny, .	G	3	12	8/– per cwt.	Below in albuminoids.
	A	3·17	10·82		
Waterford, .	G	6	11	£5 17s. 6d. per ton	Chiefly composed of rice, cotton seed, and maize meals, weed seeds and treacle. Stale.
	A	6·28	13·12		
Roscommon, .	G	5·25	25	2/3 per st.	
	A	6·32	22·75		
Cod Liver Oil Meal.					
Waterford, .	G	11	13	32/– per cwt.	
	A	11·15	16·62		
Feeding Meal.					
Antrim, . .	G	5	17	£6 1s. 3d. per ton	Appears to be maize germ meal from which part of the oil has been extracted.
	A	5	16·5		
Dublin . .	G	—	—	—	Composed of dried grains, sugar (treacle), and maize.
	A	—	—	—	
Feeding Cake.					
Leitrim, . .	G	7	17	9/6 per cwt.	
	A	10·13	14·7		
Dairy Meal.					
Armagh, . .	G	6	20	£6 18s. 0d. per ton	Low in oil and albuminoids. Sand in excess.
	A	5·84	19·18		

APPENDIX VI.—*Continued.*

RETURN giving particulars of a representative selection of Feeding Stuffs analysed by the Department during the year ended 31st December, 1914.

Description of Feeding Stuff, and County in which sample was drawn.	G=Vendor's Guarantee A=Result of Analysis.	Oil.	Albuminoids.	Price charged	Observations.
Linseed Cake.					
Dublin, . .	G	9·5	30	£8 17*s.* 6*d.* per ton	Commercially pure.
	A	11·10	28·00		
Dublin, . .	G	10·5	31·00	£9 7*s.* 6*d.* per ton	
	A	10·78	30·01		
Kildare, . .	G	9	30	£0 17*s.* 6*d.* per ton	Commercially pure.
	A	8·01	30·18		
Longford, .	G	8	28	11/9 per cwt.	
	A	8·26	28·92		
Decorticated Cotton Cake.					
Kilkenny, .	G	9	40	10/– per cwt.	Good sample.
	A	9·98	38·20		
Limerick, .	G	9	40	£9 12*s.* 0*d.* per ton	Genuine.
	A	7·27	38·32		
Antrim, . .	G	9	40	9/– per cwt.	Good sample.
	A	8·20	36·66		
Dublin, . .	G	8	41	£9 7*s.* 6*d.* per ton	
	A	7·78	40·77		
Londonderry, .	G	15	38	£9 11*s.* 0*d.* per ton	
	A	16·58	38·50		
Undecorticated Cotton Cake.					
Dublin, . .	G	5	28	£0 15*s.* 0*d.* per ton	
	A	7·87	23·97		
Kildare . .	G	4	19	£4 15*s.* 0*d.* per ton	
	A	4·53	20·82		
Kildare, . .	G	4·5	20	£8 1*s.* 9*d.* per ton.	Low in oil and albuminoids.
	A	3·58	18·02		
Extra Oil Cake.					
Tipperary, N.R.,	G	10	20	£9 10*s.* 0*d.* per ton	Usual compound cake. Excess of sand.
	A	10·26	18·20		
Westmeath, .	G	10	20	£8 12*s.* 3*d.* per ton	Cotton seed cake. Fair sample.
	A	7·90	38·48		
Soya Cotton Cake.					
Antrim, . .	G	2	28·00	£7 per ton	Treacle present.
	A	2·76	30·89		
Fattening Cake.					
Tipperary, N.R.,	G	10	20	£8 7*s.* 8*d.* per ton	Usnal compound cake.
	A	10·70	21·7		

APPENDIX VI.—*Continued.*

RETURN giving particulars of a representative selection of Feeding Stuffs analysed by the Department during the year ended 31st December, 1914.

Description of Feeding Stuff, and County in which sample was drawn.	G=Vendor's Guarantee A=Result of Analysis.	Oil.	Albuminoids.	Price charged.	Observations.
Fattening Cake.					
Cork,	G	10	24	£7 15*s.* 0*d.* per ton	Below guarantee in albuminoids.
	A	9·21	20·12		
Fattening Meal.					
Wexford,	G	10	20	£6 17*s.* 0*d.* per ton	
	A	9·34	19·45		
Palm Nut Meal.					
Waterford,	G	6·5	16	£5 3*s.* 0*d.* per ton	
	A	6·02	15·92		
Palm Nut Cake.					
Cork	G	5	19	7/6 per cwt.	
	A	4·83	17·67		
Sugared Grains.					
Dublin,	G	—	—	—	
	A	2·30	10·67		
Germolas Grains.					
Dublin,	G	4·79	9·56	£5 12*s.* 0*d.* per ton	
	A	3·01	10·94		
Rice Meal.					
Down,	G	11	12	£5 10*s.* 0*d.* per ton	
	A	12·11	12·07		
Maize Meal.					
Cork,	G	—	—	£6 18*s.* 0*d.* per ton	
	A	3·51	9·54		
Roscommon,	G	—	—	7/– per cwt.	Genuine.
	A	4·78	—		
Limerick,	G	—	—	—	
	A	3·02	9·49		
Kilkenny,	G	—	—	17/3 per sack	
	A	4·82	—		
Kerry,	G	—	—	19/6 per sack	
	A	5·17	—		
Down,	G	—	—	6/1½ per cwt.	
	A	3·15	—		
Westmeath,	G	—	—	£6 15*s.* 0*d.* per ton	
	A	4·26	—		

Appendix VI.—*Continued.*

Return giving particulars of a representative selection of Feeding Stuffs analysed by the Department during the year ended 31st December, 1914.

Description of Feeding Stuff, and County in which sample was drawn.	G = Vendor's Guarantee A = Result of Analysis.	Oil.	Albuminoids.	Price charged	Observations.
Westmeath,	G	2	16	£7 12*s.* 6*d.* per ton	
	A	1·79	9·64		
Donegal,	G	—	—	£6 16*s.* 6*d.* per ton	
	A	3·76	9·11		
Maize Bran.					
Wicklow,	G	—	—	—	
	A	8·77	12·68		
Maize Germ Cake.					
Dublin,	G	5	11·66	—	Contains nothing foreign to maize.
	A	6·41	—		
Cork,	G	—	—	—	
	A	6·7	12·26		
Maize Germ Meal.					
Wexford,	G	—	—	£6 16*s.* 6*d.* per ton	
	A	14·57	12·72		
Flaked Maize and Beans.					
Louth,	G	—	—	—	Chiefly composed of maize; very little bean.
	A	2·47	16·66		

APPENDIX VII.

SPECIAL SUPPLEMENT TO LEAFLET No. 17.

ARTIFICIAL MANURES FOR 1915 CROPS.

Owing to the War potash is now so scarce and dear that it will not pay farmers to apply it to oats, barley, wheat, meadow hay, turnips, or mangels. They are accordingly strongly advised to use for these crops the mixtures set out below.

Whatever potash can be purchased should be applied to the potato crop which more than any other will pay for an application of this manure. Farmers should, therefore, use per statute acre for potatoes in addition to dung

1 cwt. sulphate of ammonia,
4 cwt. superphosphates,

and as much potash as they can procure, up to 1 cwt. muriate or sulphate of potash, or 4 cwt. kainit.

For the turnip crop the Department recommend farmers to distribute their farmyard manure over as much of the ground as possible and to supplement this with superphosphate or basic slag instead of using dung more liberally on one portion of the ground and using only artificial manures on the remainder.

For information as to how to value manures see A.B. Memo. No. 4.

The following kinds and quantities of manure are recommended per statute acre:—

OATS OR BARLEY.

A mixture of :—
1 cwt. sulphate of ammonia,
3 cwt. superphosphate.

WHEAT.

1 cwt. nitrate of soda applied in March or April.

MEADOW HAY.

A mixture of :—
1 cwt. nitrate of soda,
3 cwt. superphosphates.

The superphosphate should be applied in February and the nitrate of soda early in April, or, if mixed together, these manures should be applied immediately after mixing.

POTATOES.

1 cwt. sulphate of ammonia,
4 cwt. superphosphate,
and as much potash as can be procured, up to 1 cwt. muriate or sulphate of potash, or 4 cwt. kainit.

TURNIPS.

(a) For land in good condition :—
10-15 tons dung,
4–6 cwt. superphosphate or basic slag.
(b) For land naturally poor or in low condition :—
10–15 tons dung and a mixture of artificials, consisting of :—
1 cwt. sulphate of ammonia,
4 cwt. superphosphate.

MANGELS.

A dressing of 20 tons dung and a mixture of artificials consisting of :—
2 cwt. sulphate of ammonia,
4 cwt. superphosphate,
4 cwt. salt.

December, 1914.

APPENDIX VIII.

MANURES RECOMMENDED BY THE DEPARTMENT FOR VARIOUS CROPS.

Extracted from Department's Leaflet No. 17—The Use and Purchase of Manures.

The following kinds and quantities of manure are recommended per statute acre for the different crops. The proportions are those that experiment has shown to be best, but the quantity may be varied according to the quality and condition of the land. Generally, however, it will be found profitable to give the full dressing recommended.

OATS AND BARLEY.

A complete manure consisting of

1 cwt. Sulphate of Ammonia	having an approximate analysis of	3·25% Nitrogen.
3 cwt. Superphosphate		17·5% Soluble Phosphate.
2 cwt. Kainit		4·0% Potash.

WHEAT.

A mixture of

2 cwt. Superphosphate	having an approximate analysis of	17·5% Soluble Phosphate.
2 cwt. Kainit		6·0% Potash.

Applied at sowing time and followed in March or April by a top-dressing of 1 cwt. Nitrate of Soda.

MEADOW HAY.

A mixture of

2 cwt. Superphosphate	having an approximate analysis of	17·5% Soluble Phosphate.
2 cwt. Kainit		6·0% Potash.

Applied before the end of February and followed in early April by a top-dressing of 1 cwt. Nitrate of Soda.

POTATOES.

(*a*) A dressing of 15 tons dung and a complete mixture of artificials consisting of

1 cwt. Sulphate of Ammonia	having an approximate analysis of	3·25% Nitrogen.
4 cwt. Superphosphate		23·0% Soluble Phosphate.
1 cwt. Muriate of Potash		8·0% Potash.

(*b*) When no dung is applied the same mixture of artificials may be used but the quantity should be increased by one-half.

TURNIPS.

(*a*) For land in good condition :—

10–15 tons dung.

4–6 cwt. Superphosphate or Basic Slag.

(*b*) For land naturally poor or in low condition :—

10–15 tons dung and a complete mixture of artificials consisting of

1 cwt. Sulphate of Ammonia	having an approximate analysis of	2·5% Nitrogen.
4 cwt. Superphosphate		17·5% Soluble Phosphate.
3 cwt. Kainit		4·5% Potash.

The Superphosphate in above mixture may be replaced by an equivalent amount of Basic Slag, but in this case the Basic Slag and Kainit should be mixed and sown together, previous to the Sulphate of Ammonia.

(*c*) For turnips grown without dung the same mixture of artificials may be used, but the quantity should be increased by one-half.

MANGELS.

A dressing of 20 tons dung and a mixture of artificials consisting of

2 cwt. Sulphate of Ammonia 4 cwt. Superphosphate 4 cwt. Salt or Kainit	having an approximate analysis of	4·0% Nitrogen. 14·0% Soluble Phosphate. 4·75% Potash (if mixture includes Kainit.)

FLAX.

(*a*) On soils in good condition :—
1–1½ cwt. Muriate of Potash or 4–5 cwt. Kainit.

(*b*) On poor or medium soils :—
1–1½ cwt. Muriate of Potash or 4–5 cwt. Kainit.
½ cwt. Sulphate of Ammonia.

(Note.—Superphosphate is taken as 35% and Basic Slag as high grade.)

The above mixtures of manures are recommended for land of average fertility, but each farmer should experiment for himself to ascertain the quantities which are likely to prove most profitable under his own local conditions. This should involve no difficulty and need entail little trouble.

DEPARTMENT OF AGRICULTURE AND
TECHNICAL INSTRUCTION FOR IRELAND.
September, 1914.

APPENDIX IX.

SUMMARY OF REPORTS RECEIVED FROM THE OFFICIAL SAMPLERS ON THE CONDITION OF THE TRADE IN FERTILISERS AND FEEDING STUFFS IN THEIR RESPECTIVE DISTRICTS DURING THE CALENDAR YEAR ENDED 31ST DECEMBER, 1914.

COUNTY ANTRIM.—*Fertilisers*—No inferior manure was noticed during 1914 ; the quality was uniformly good. *Feeding Stuffs*—In a few cases the feeding stuffs sold were slightly below guarantee. Two samples (deficient in oil) of inferior compound foods were taken.

COUNTY ARMAGH.—*Fertilisers*—No artificial manures of inferior quality were met with. *Feeding Stuffs*—The feeding stuffs were of good quality and none found to be below guarantee.

COUNTY CARLOW.—*Fertilisers*—Trade was generally satisfactory ; prices were uniformly reasonable and no low-grade manures sold. *Feeding Stuffs*—The feeding stuff trade for 1914 was satisfactory. High priced inferior calf meals were no longer sold and there was an extensive sale of good quality "cakes" ; there was practically no trade in specially prepared "foods."

COUNTY CAVAN.—*Fertilisers*—Manures sold were of fairly satisfactory quality ; trade was very adversely affected by the War. *Feeding Stuffs*—The feeding cakes were of fair quality but not of the best composition ; a few traders persisted in stocking small quantities of low-grade calf meals. Invoices did not usually seem to be given by the shop-keepers.

COUNTY CLARE.—*Fertilisers*—(1)* The trade in manures in this district has not been satisfactory, low-grade "specials" having been extensively used ; an increase was noted, however, in the use of high-grade manures —basic slag, sulphate of ammonia, muriate of potash, etc. (2) In this district the manures sold were of average quality; no inferior high-priced specials came under notice, but a large consignment of low-grade basic slag was sold. *Feeding Stuffs*—(1) The quality of feeding stuffs was generally good especially in respect of "cakes"; there was a marked decrease in the sale of low-grade calf meals, and practically no demand for proprietary preparations; maize meal (oil extracted) was, however, extensively offered for sale. (2) Farmers frequently complained as to the quality of Indian meal supplied to them; sale of high-priced calf meals had almost ceased; generally speaking, the feeding stuffs sold were of fair average quality.

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* The reports of the several samplers, when there are more than one for a county are given in numbered paragraphs.

COUNTY CORK.—*Fertilisers*—(1) Manures sold were generally satisfactory in this district, and no complaints in the matter received. (2) In this district the condition of the trade gives no ground for complaint; only reliable manures were stocked and the statutory requirements of the traders without exception complied with. (3) No inferior manures have been sold during 1914, only materials of proven reliability having been stocked. (4) The sale of inferior fertilisers in this district has entirely ceased; the prescribed invoice has in all cases been given and only the best materials were stocked by the traders. (5) No case was met with of the sale of an inferior manure. The local traders drew their stocks only from firms of good repute. *Feeding Stuffs*—(1) The bulk of the trade consisted in maize and linseed meals, which were up to the required standard; the trade in proprietary foods was very small. (2) The trade in this district was in a very satisfactory condition—no complaints having been received from farmers and the samples taken having proved up to guarantee in every case. (3) No inferior feeding stuffs appear to have been sold during the year and the sale of suspicious calf meals by travelling agents has ceased. (4) The trade in feeding stuffs in this district is now on a satisfactory footing. No complaints have been received from purchasers, but a local trader complained as to a consignment of oil-extracted maize supplied to him. (5) The quality of the feeding stuffs stocked in this district was on the whole satisfactory. Favourable reports were received on the analysis of all samples submitted.

COUNTY DONEGAL.—*Fertilisers*—(1) The manures sold in this district were on the whole satisfactory, but some of them were not high grade; prices, however, were generally reasonable. (2) No inferior artificial manures seem to have been on sale; all the samples tested were found up to guarantee. The trade was chiefly in superphosphates (35% and 26%). *Feeding Stuffs*—(1) The trade in feeding stuffs was also on a satisfactory footing. (2) The principal feeding stuffs sold in this county are oil and cotton cakes and meals which were fairly good, as shown by the examination of the samples submitted.

COUNTY DOWN.—*Fertilisers*—No inferior manures were met with in this county during 1914. The use of the mixtures compounded according to the formulas recommended by the Department is becoming increasingly popular, replacing to a large extent that of the "special" manures hitherto employed; the use of guano has also ceased. The trade has been seriously injured by the war. *Feeding Stuffs*—The condition of the trade in feeding stuffs was not satisfactory; there was still a considerable demand for proprietary cooked foods and calf meals, which was, however, undoubtedly decreasing. Towards the close of the year the sale of compound cakes increased consequent on the enhanced prices of linseed and cotton cakes.

COUNTY DUBLIN.—*Fertilisers*—No inferior manures seem to have been on sale in this county, artificial manures being, in this instance, largely replaced by "town dung." *Feeding Stuffs*—The feeding stuffs sold were of very high quality; no instance was observed of the sale of inferior stuff.

COUNTY FERMANAGH.—*Fertilisers*—The state of the trade was on the whole satisfactory, no inferior fertilisers having been met with during the year. *Feeding Stuffs*—The same remark applies to the trade in feeding stuffs.

County Galway.—*Fertilisers*—(1) Most of the manures sold in this county are manufactured either by local or other Irish firms; they were all reasonably priced and up to guarantee. Invoices, however, did not seem to be given regularly. (2) The quality of the artificial manures sold in this district during the year was on the whole satisfactory. Some low-grade "special" manures prepared by English firms still found a sale. Experiments with these manures were conducted side by side with those made up according to the Department's formulas, and the results obtained illustrated in a striking manner the superiority of the latter preparations. In the earlier part of the year many traders were observed to be remiss in the matter of giving the prescribed invoice with consignments, but since the institution of proceedings by the Department a marked improvement is apparent in this particular. (3) No fertilisers of inferior quality seem to have been sold in this district during 1914, the samples tested having all been found up to guarantee. In the earlier part of the year traders were frequently observed not to give invoices with consignments, but the representations made in the matter effected the desired result. (4) The chief manures sold in this district were basic slag 34%, superphosphate 35%, guano, sulphate of ammonia and the usual "specials"; there was a greater demand for guano than for "specials." Invoices were regularly given and the requirements of the Fertilisers and Feeding Stuffs Act were otherwise satisfactorily fulfilled. No case of questionable or fraudulent trade was observed. *Feeding Stuffs*—(1) The quality of the feeding stuffs sold was fairly satisfactory, and there was a marked decrease in the sale of high-priced calf meals and other proprietary foods. Invoices did not usually seem to be given. (2) The feeding stuffs sold in this district were generally of very fair quality—the trade in feeding cakes and calf meals was comparatively small; early in the year the "cakes" of one particular firm were observed to be rather stale, but later on there was an improvement in their quality. (3) No complaints were received in this district as to the quality of the feeding stuffs supplied to purchasers. The trade in "cakes" and calf meals was inconsiderable, and no business was done by travelling agents for feeding stuffs. (4) The trade in feeding stuffs was in a fairly satisfactory condition except that prices were high.

County Kerry.—*Fertilisers*—(1) No artificial manures of inferior quality were met with in this district during the year. (2) The quality of the manures sold during 1914 was better than that of the preceding year. High grades of slag and superphosphate were widely used and the use of compound and "special" manures is gradually lessening in favour of that of single manures (such as superphosphate, slag, nitrate of soda, sulphate of ammonia, muriate of potash, kainit, etc.) which the farmers mix for themselves. (3) Nearly all the manures sold in this district were the product of reputable firms; prices were generally reasonable except in respect of the manures of one particular firm. Frequently cases came under notice in which the prescribed invoice had not been supplied with consignments. *Feeding Stuffs*—(1) Some maize meal in bad condition was sold in the south-west of the county, but with this exception no feeding stuffs of inferior quality were sold during the year. (2) The feeding stuffs sold during the year were generally of very fair quality; but some inferior linseed meals and cakes found a sale, but were apparently up to guarantee. The sale of proprietary calf meals was decreasing, their place being taken by simple stuffs such as flax seed, oatmeal, linseed cake, etc. The use of other proprietary "foods," however, was increasing. (3) An improvement was noted; linseed and cotton cakes were more widely asked for in place of proprietary cakes, and inferior, high-priced calf meals were no longer sold. The meal mixture recommended by the Department was growing in popularity. The quality of the Indian meal sold during the latter part of the year gave rise to considerable complaint from farmers.

County Kildare.—*Fertilisers*—No inferior compound manures were sold in this county, the demand being chiefly for basic slag, superphosphates, kainit and other simple manures; there was very little sale of low-grade slag. *Feeding Stuffs*—The quality of the feeding stuffs sold was well up to the average, no inferior materials having been met with. The trade was chiefly in linseed, cotton and compound cakes.

COUNTY KILKENNY.—*Fertilisers*—(1) No inferior manures were sold in this district during the year 1914. (2) All the samples submitted from this district were found up to guarantee except one—a "General Fertiliser" sold through the medium of a travelling agent. *Feeding Stuffs*—(1) No inferior feeding stuffs appear to have been sold in this district during the year under review. (2) Only one inferior feeding stuff was met with—a "Milk Substitute" with which the prescribed invoice was not given.

KING'S COUNTY.—*Fertilisers*—The demand was chiefly for the *simple* artificial manures the sale of compound proprietary manures being very small. No samples of inferior fertilisers were met with in the course of the year. *Feeding Stuffs*—The sale of inferior feeding stuffs in this county has practically ceased. The trade was chiefly in cotton, linseed and fattening cakes, pollard and Indian meal.

COUNTY LEITRIM.—*Fertilisers*—A considerable improvement was noted in the quality of fertilisers sold in this county; all the samples submitted for analysis were found up to guarantee. The chief manures used were dissolved guano and the mixtures recommended by the Department; and the demand for low-grade manures was lessening. *Feeding Stuffs*—The feeding stuffs were of fair quality, but the improvement was not so marked as in the case of fertilisers. The trade is largely in compound feeding stuffs which are frequently of low grade. The samples analysed, however, have proved up to the stated guarantee.

COUNTY LIMERICK.—*Fertilisers*—(1) Farmers were more insistent on obtaining the higher grade manures. No complaints were received from purchasers, and the manures sold were steadily improving in quality. There was a growing tendency amongst the farmers to make up their own mixtures according to standard formulas. (2) Most of the manures sold in this district were applied for grazing and meadowing purposes, and as far as observed, appeared to be cheap and low grade. The manures sold for tillage purposs were not inferior, though in the case of the "special" manures of one particular firm, the prices were exorbitant. *Feeding Stuffs*—(1) The quality of the feeding stuffs sold in this district was considered to be satisfactory; favourable reports were received on all the samples submitted for examination and no complaints were made by farmers as to the quality of the stuffs sold to them. Travelling agents for unknown and dear feeding stuffs did practically no business in this district. (2) The feeding stuffs sold in this district during the year under review were fairly good; only one instance of the sale of an inferior feeding stuff (Decorticated Cotton Cake) came under notice.

COUNTY LONDONDERRY.—*Fertilisers*—The manures sold during 1914 were of good quality. The only inferior manure met with was a low-grade slag. *Feeding Stuffs*—The quality of the feeding stuffs was fairly good. No inferior sample came under notice. On the outbreak of the war, however, there was reason to suspect that some inferior linseed cake meals and compound cakes and meals were being foisted upon the farmers.

COUNTY LONGFORD.—*Fertilisers*—The quality of the artificial manures sold was generally good. The trade was chiefly in slag. *Feeding Stuffs*—These also were of good quality. All the samples tested were found to be up to guarantee.

COUNTY LOUTH.—*Fertilisers*—The trade in artificial fertilisers during 1914 was in a satisfactory condition. Compound manures were still used on a small scale, but the majority of the farmers purchased the single (or simple) manures and, where necessary, mixed them for themselves. Invoices were regularly given. *Feeding Stuffs*—In feeding stuffs also trade was satisfactory, though large quantities of compound foods and cakes were sold. These, however, seemed to give good results and were up to guarantee.

COUNTY MAYO.—*Fertilisers*—(1) The fertilisers sold in this district were of a fairly satisfactory standard. (2) All the samples tested were up to the stated guarantee, but the various "special" manures were too high-priced. A considerable quantity of the "special" manures of one particular firm was sold; these were generally very inferior and the prices grossly exorbitant; they were mostly sold through travelling agents, easy terms of credit being usually offered. (3) The trade in this district was chiefly in superphosphate, bone compounds, and "specials"; the "specials" were produced by reputable firms and no occasion for suspecting them arose. *Feeding Stuffs*—(1) The feeding stuffs sold in this district were of fairly satisfactory quality. (2) The trade in feeding stuffs on the whole may be considered to have been satisfactory. The demand was chiefly for cotton and linseed cakes, compound "foods," cakes, and calf meals; the prices charged for calf meals were exorbitant. (3) No suspicious cases were met with in this district.

COUNTY MEATH.—*Fertilisers*—The fertilisers sold in this county were all of standard brand and prices fair; no inferior manures were noticed. *Feeding Stuffs*—The same may be said of the trade in feeding stuffs.

COUNTY MONAGHAN.—*Fertilisers*—The manure trade was in a fairly satisfactory condition; no inferior samples were observed; a considerable quantity of "specials" were still sold but these offered no ground for complaint as to quality, price, etc. *Feeding Stuffs*—These wsre generally good. Some exorbitantly priced calf meals and feeding meals were on sale but met with little demand.

QUEEN'S COUNTY.—*Fertilisers*—All the fertilisers offered for sale were produced either by Irish or reliable English firms. *Feeding Stuffs*—The feeding stuffs stocked were generally of good brand though some of the smaller traders are suspected of having sold small quantities of lowsr grade linseed cake meal.

COUNTY ROSCOMMON.—*Fertilisers*—(1) There was an increased demand for the mixtures made up according to the formulas recommsnded by the Department; only the higher grades of basic slag and superphosphate were generally used in this district. The bulk of the "speoial" manures, especially those of one particular firm, were still, however, of inferior composition, particularly in their low percentage of potash. (2) The quality of artificial manures sold in this district continued satisfactory; but a large quantity of exorbitantly priced guano was used for the potato crop. Farmers are gradually lsarning to mix the manures appropriate for the various farm crops from the simple manures. *Feeding Stuffs*—(1) The principal feeding stuffs sold in this district were linseed cake and linsesd meal which were invariably of good quality; some proprietary foods were still used in small quantities, though, owing to enhanced prices due to the war, farmers were more inclined towards the close of the year to make up their own compounds from home-grown grain. (2) A marked improvement was noted in the quality of feeding s uffs sold in this district; the calf meals and pig meals of one particular firm were unsatisfactory but their sale has been discontinued. There was reason to suspect that a good deal of oil-extracted meal was being sold as Indian meal.

COUNTY SLIGO.—*Fertilisers*—The trade was generally satisfactory, consisting chiefly in high-grade guano, basic slag, superphosphate and some special potato and turnip manures. All the samples submitted for analysis were found up to guarantee. Good results were noted from experiments carried out to show the superiority of approved mixtures. *Feeding Stuffs*—In feeding stuffs also the trade remained on a satisfactory footing. The demand was chiefly for linseed cake, Indian meal and pollard. Calf meals of reliable brand were also extensively sold though the prices of these were rather high; one such meal was shown on analysis to be worth only half the price asked for it.

COUNTY TIPPERARY, N.R.—*Fertilisers*—The artificial manures sold in this county were, with few exceptions, of good quality, and the mixtures recommended by the Department were widely used. Some compound manures sold left much to be desired as to their quality and price. *Feeding Stuffs*—The various brands of feeding stuffs sold throughout this riding were on the whole very satisfactory ; the cakes used were of high quality but some calf meals left room for improvement. These latter, however, were not sold to any appreciable extent. During the period under review farmers used their home-grown grains to a considerable extent for feeding purposes.

COUNTY TIPPERARY, S.R.—*Fertilisers*—No inferior fertilisers were noticed during the year 1914. The manures chiefly used were superphosphate (35% and 26%) and basic slag. *Feeding Stuffs*—No case of an inferior feeding stuff was observed. The demand was chiefly for Indian meal, bran, cotton and linseed cakes and some compound "foods" and fattening cakes.

COUNTY TYRONE.—*Fertilisers*—The manures sold in this county during the year 1914 were generally satisfactory ; one sample of low-grade slag was met with. *Feeding Stuffs*—The poor quality of the Indian meal supplied formed the subject of a County Council resolution ; the other feeding stuffs were normal, with the exception of a few high-priced meals.

COUNTY WATERFORD.—*Fertilisers*—The artificial manures sold in this county during 1914 were of satisfactory quality. There was a growing demand for simple manures, especially 35% superphosphate, to the exclusion of compound and "special" manures ; the value of some of these last-mentioned brands was in many cases questionable, though they still met with a considerable sale. *Feeding Stuffs*—The trade in feeding stuffs was on the whole satisfactory, the bulk of the cakes and meals sold having been of reliable brand ; samples of two consignments, however,—one of pig meal and other of cod liver oil meal—were found on examination to be unsatisfactory.

COUNTY WESTMEATH.—*Fertilisers*—So far as could be ascertained, no decidedly inferior manure was sold in this county during the period under review. A large quantity of "specials" was sold but they were generally up to guarantee. Only the higher grades of slag, superphosphate, and other simple manures were on the market. *Feeding Stuffs*—The quality of the feeding stuffs was of a fairly high standard. Compound stuffs were generally procured direct from the manufacturers and proved on analysis to be up to guarantee.

COUNTY WEXFORD.—*Fertilisers*—The quality of the manures in this county was very good ; superphosphate (35%) was very largely used and also basic slag and bone manures ; small consignments of inferior manures which, however, were up to the stated guarantee were sold in one district. *Feeding Stuffs*—These were usually fairly good, especially the simple cakes, such as linseed and cotton cakes ; but the prices of compound cakes were in many cases unreasonably high.

COUNTY WICKLOW.—*Fertilisers*—The manures sold during 1914 were of good quality. The farmers seemed keenly alive to the necessity of securing the best possible value for their money in this as in any other commodity ; most of them duly regard considerations of analysis, condition and price ; others, however, are guided more by the reputation of the manufacturer or retailer concerned. One sample of ground burnt lime was found unsatisfactory on analysis. *Feeding Stuffs*—In so far as could be observed, the feeding stuffs also were of good quality ; only materials of proven excellence were usually purchased. All the samples submitted were found satisfactory on examination.

APPENDIX X.

CIRCULAR LETTER TO COUNTY COUNCILS WHICH HAVE NOT ADOPTED PART I. OF THE WEEDS AND AGRICULTURAL SEEDS (IRELAND) ACT, 1909.

Department of Agriculture and
Technical Instruction for Ireland,
Upper Merrion Street
Dublin, *7th March*, 1914.

No. A. 5257/14.

WEEDS AND AGRICULTURAL SEEDS (IRELAND) ACT, 1909.

Sir,—The Department desire again to invite the attention of your Council to the provisions of the above-mentioned Act (copy enclosed) relating to the destruction of noxious weeds, in the hope that the Council may see their way to consent to Part I. of the Act being put into operation this year.

The Act empowers the Department, with the consent of the Co. Council, to schedule as "noxious weeds" all or any of the undermentioned plants, viz., Ragwort, Charlock, Coltsfoot, Thistle, and Dock. When an Order scheduling all or any of these weeds has been made the Department, at the proper season, station one or more inspectors in the County, to see that the occupiers of lands on which such weeds are growing take suitable measures in accordance with the requirements of the Act to eradicate the weeds.

It may be of advantage to the Council in considering this matter to know that the operation of the Act in the twenty-three counties and two county boroughs in which it is at present in force has been followed on the whole by very beneficial results to the agricultural community, while its administration has caused little trouble with agriculturists. For example, last year over 12,000 notices requiring the destruction of noxious weeds were served under the Act, and the number of cases in which difficulty was experienced in securing compliance with the notices served amounted to less than one per cent. of the total.

It is part of the duty of the inspectors to point out to the occupiers of land which they visit the harm to their own interests done by allowing noxious weeds to grow unchecked. From this point of view the work of the inspectors is of considerable educational value. The readiness with which, in the vast majority of cases, weeds were destroyed shows that agriculturists generally appreciate the advantages of concerted action in endeavouring to reduce their prevalence.

The Department would be glad if, when the matter is under consideration, you would remind the Council (*a*) that the whole cost of administration of the Act is borne by the Department; (*b*) that the necessary inspections for the purposes of the Act are carried out by the Department's special staff; so that the adoption of the Act will not involve any expenditure from the funds of the County Council or of the County Committee of Agriculture, or any addition to the staff employed in carrying out the schemes administered by the County Committee; and (c) that it will remain open to the Council to withdraw their consent should they subsequently become dissatisfied with the results.

It may also be pointed out that the Council of Agriculture, on which your Council is represented, have repeatedly discussed the question, and on each occasion have unanimously agreed on the desirability of this measure being adopted in every county.

In the event of your Council deciding to consent to the adoption of the Act, the resolution which the Council adopt should be worded as in the accompanying draft, as the Department are advised that any addition to the resolution in the nature of a limitation to its scope may have the effect of invalidating it. It is further suggested that you should ask the Secretary of the County Committee of Agriculture to arrange for the attendance of the County Itinerant Instructor in Agriculture at the meeting of the Co. Council when the matter is under discussion, as the Instructor will be in a position to afford the Council information as to the condition of the County as regards noxious weeds, and the manner in which the Act is worked.

I have to request that you will in due course inform the Department of the decision of the County Council in this matter. Should a resolution consenting to the making of an Order be adopted, it will be necessary to furnish the Department with a sealed copy.—I am, etc.,

T. P. Gill, *Secretary*.

APPENDIX XI.

Poster *Re* Destruction of Noxious Weeds.

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

CUT

WEEDS

BEFORE THEY

FLOWER.

READ LEAFLET No. 97.

To be had FREE on application to

The Secretary, Department of Agriculture and
Technical Instruction for Ireland,
Dublin.

APPENDIX XII.

Return showing the Number of Samples of Seeds taken by the Agricultural Instructors as Official Samplers during the year ended 31st December, 1914.

County.	Number of Samples Taken.	County	Number of Samples Taken.
Antrim, . . .	151	Londonderry, . .	138
Armagh, . .	0	Longford, . .	40
Carlow, . . .	81	Louth, . . .	54
Cavan, . .	67	Mayo, . . .	191
Clare, . .	57	Meath, . . .	53
Cork, . . .	402	Monaghan, . .	44
Donegal, . . .	23	Queen's, . . .	224
Down, . . .	125	Roscommon, . .	139
Dublin, . . .	16	Sligo, . . .	72
Fermanagh, . .	52	Tipperary (N.R.), .	227
Galway, . . .	169	Tipperary (S.R.), .	86
Kerry, . . .	137	Tyrone, . . .	113
Kildaro, . . .	58	Waterford, . .	69
Kilkenny, . .	223	Westmeath, . .	80
King's, . . .	66	Woxford, . .	91
Leitrim, . . .	21	Wicklow, . .	72
Limerick, . . .	141		
		Total, . .	3.482*

*1,489 Samples were in addition taken by other Official Samplers.

APPENDIX XIII.

MEMORANDUM *RE* SALE OF "HAYSEED."

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

WARNING.

SALE OF HAYSEED.

Proprietors of hay stores, farmers, retailers, and others are warned not to dispose of the sweepings of hay-lofts or similar materials for use as agricultural seed. Such materials, whether used alone or with good seed, are totally unfit for sowing on land with a view to producing hay or pasture. They often infest land with noxious weeds or worthless grasses.

At a recent Quarter Sessions in Co. Cork a farmer sued a retailer who sold him so-called "hayseed" of this description. The farmer obtained a decree for £8 damages and £4 expenses, as well as costs.

Particulars of the grasses and mixtures recommended by the Department for laying down land to pasture will be found in Leaflet No. 42.

Copies of this Leaflet may be obtained free of charge, and post free on application to the Secretary, Department of Agriculture and Technical Instruction for Ireland, Upper Merrion Street, Dublin. Letters of application so addressed need not be stamped.

APPENDIX XIV.

POSTER *RE* AMERICAN GOOSEBERRY MILDEW AND BLACK CURRANT MITE.

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

WARNING TO FRUIT-GROWERS.

EXAMINE GOOSEBERRY AND CURRANT BUSHES FOR DISEASE.

FAILURE TO NOTIFY EXISTENCE OF AMERICAN GOOSEBERRY MILDEW OR BLACK CURRANT MITE IS PUNISHABLE BY A PENALTY NOT EXCEEDING £10.

See the American Gooseberry Mildew and Black Currant Mite (Ireland) Order, 1912, and Read Leaflets 47 and 76, to be had FREE on application to

The Secretary, Department of Agriculture and
Technical Instruction for Ireland,
Upper Merrion Street, Dublin.

APPENDIX XV.

CIRCULAR LETTER TO NURSERYMEN.

No. A. 9411–14.

DEPARTMENT OF AGRICULTURE AND
TECHNICAL INSTRUCTION FOR IRELAND,
UPPER MERRION STREET,
DUBLIN, 12*th May*, 1914.

AMERICAN GOOSEBERRY MILDEW AND BLACK CURRANT MITE (IRELAND) ORDER, 1912.

GENTLEMEN,—As a result of recent nursery inspections, the Department consider it necessary to remind nurserymen in Ireland of the requirements of Article 4 of the American Gooseberry Mildew and Black Currant Mite (Ireland) Order, 1912 (copy enclosed), which prescribes as follows:—

> "The occupier of any land or premises on which there is a bush which is or appears to be diseased shall forthwith notify the fact in writing to the Department either directly or through the Clerk of the Borough Council or Urban District Council as the case may be or where the land or premises are situated in a rural district through the Secretary of the County Committee of Agriculture for the County or the County Instructor in Horticulture employed by that Committee. Where practicable a specimen showing the disease or suspected disease shall accompany the notice. When the notification has been made to the Clerk or Secretary or County Instructor as aforesaid it shall be the duty of such Clerk or Secretary or County Instructor to communicate the fact forthwith to the Department."

In this connection I have also to direct attention to the following provisions of Article 8 of the Order :—

> "Every person shall be liable on conviction to a penalty not exceeding Ten Pounds who
>
> (i) fails to give the notification of disease as required by Article 4 ; or
>
> (ii) knowingly or without reasonable excuse sells or exposes for sale or has in his possession for the purpose of selling or exposing for sale any bush or the fruit of any gooseberry bush diseased or suspected of being diseased."

Failure, especially on the part of nurserymen, to notify the existence of the diseases in question must be regarded as a very serious offence, and consequently *the Department desire to make it clear to all concerned that if after this date their Inspector finds in a nursery gooseberry bushes or currant bushes affected with American Gooseberry Mildew or Black Currant Mite respectively, of which notification has not been duly given as required by Article 4 above quoted, the case will in the ordinary course be referred to the Chief Crown Solicitor with a view to having a prosecution instituted.*

The Department, however, feel sure, now that special attention has been drawn to the requirements of the Order in the matter of notifying the diseases in question, nurserymen will have their stocks of bushes kept under close and frequent observation, and will immediately notify the Department of any appearance of either American Gooseberry Mildew or Black Currant Mite in their nurseries.—I am, &c.,

T. P. GILL, *Secretary.*

APPENDIX XVI.

NOTICE TO FRUIT-GROWERS.

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

AMERICAN GOOSEBERRY MILDEW AND BLACK CURRANT MITE (IRELAND) ORDER, 1912.

WARNING.

The occupier of any land or premises on which there are gooseberry or black currant bushes which are, or appear to be, affected with American Gooseberry Mildew or Black Currant Mite respectively is required by Article 4 of the above mentioned Order (copy enclosed) forthwith to notify the fact in writing to the Department of Agriculture and Technical Instruction for Ireland either directly or through the Clerk of the Borough Council or Urban District Council as the case may be, or where the land or premises are situated in a rural district through the Secretary of the County Committee of Agriculture for the County or the County Instructor in Horticulture employed by that Committee.

Leaflets descriptive of the diseases in question may be obtained free of charge on application to the Department.

In all cases of doubt, specimen twigs suspected of being affected with disease should be sent to the offices of the Department for free examination.

Failure to report American Gooseberry Mildew or Black Currant Mite as required by Article 4 of the Order in question is punishable by a fine not exceeding £10.

Communications on this subject intended for the Department should be addressed as follows :—

THE SECRETARY,
DEPARTMENT OF AGRICULTURE AND
TECHNICAL INSTRUCTION FOR IRELAND,
4 UPPER MERRION STREET, DUBLIN.

May, 1914.

APPENDIX XVII.

AMERICAN GOOSEBERRY MILDEW AND BLACK CURRANT MITE (IRELAND) ORDER, 1912.

CIRCULAR LETTER TO SALESMEN AT FRUIT MARKETS.

DEPARTMENT OF AGRICULTURE AND
TECHNICAL INSTRUCTION FOR IRELAND,
UPPER MERRION STREET,
DUBLIN, *17th July*, 1914.

No. A. 10706/14.

SIR,—The Department desire to direct the attention of salesmen to the warning issued in May last, relative to the selling of diseased gooseberries in public markets. Owing to the fact that on several occasions consignments of diseased gooseberries have been observed recently in the markets, the Department feel obliged again to refer to the serious nature of the offence of selling or exposing for sale such fruit. (See Article 8 (IV.) of the above-mentioned Order, copy enclosed.)

At present there would seem to be an impression amongst some salesmen in the fruit markets that in order to comply with the requirements of the American Gooseberry Mildew and Black Currant Mite (Ireland) Order, 1912, it is sufficient for them to withdraw consignments of diseased gooseberries from sale on being served with a Notice to do so. The Department wish it to be clearly understood that the salesman is responsible for seeing that diseased gooseberries are not sold or exposed for sale by him, and that if he sells or exposes for sale such fruit he commits an offence under the Order. He should, therefore, carefully examine all consignments of gooseberries which are offered to him before accepting them. The Department are of opinion that all salesmen in the markets should now be thoroughly acquainted with the nature of the disease. A leaflet describing the disease American Gooseberry Mildew is enclosed herewith, and specimen affected berries will, if possible, be shown by the Department's Inspector to any salesman who makes a written application to that effect to these offices.

The Department desire it to be known that in any case where their Inspector finds gooseberries affected with American Gooseberry Mildew sold or exposed for sale in contravention of Article 8 of the Order in question a prosecution may be instituted forthwith.—I am, etc.,

T. P. GILL, *Secretary.*

To the Salesmen at Fruit Markets.

COPY OF WARNING NOTICE REFERRED TO IN FOREGOING LETTER.

WARNING.

AMERICAN GOOSEBERRY MILDEW AND BLACK CURRANT MITE (IRELAND) ORDER, 1912.

Salesmen in fruit markets are warned that under the provisions of Article 8 of the above-mentioned Order—

"Every person shall be liable on conviction to a penalty not exceeding Ten Pounds who

(i) knowingly or without reasonable excuse sells or exposes for sale or has in his possession for the purpose of selling or exposing for sale any bush or the fruit of any gooseberry bush diseased or suspected of being diseased ; or

(ii) fails duly to destroy any bush, fruit, packing material, package, box, or other thing when required by a Notice served on him under this Order."

As the season for marketing gooseberries has now commenced, salesmen should take special care that no gooseberries affected with American Gooseberry Mildew are sold or exposed for sale by them.

May, 1914.

APPENDIX XVIII.

CORRESPONDENCE *RE* COMPENSATION FOR GOOSEBERRY BUSHES DESTROYED UNDER THE DESTRUCTIVE INSECTS AND PESTS ACTS, 1877 AND 1907.

(1) CIRCULAR LETTER TO COUNTY COUNCILS.

DEPARTMENT OF AGRICULTURE AND
TECHNICAL INSTRUCTION FOR IRELAND,
UPPER MERRION STREET,
DUBLIN, *10th August*, 1914.

No. A. 11746-14.

SIR,—I have to transmit herewith, for the information of the County Council of...................... a copy of an Order made by the Department under the Destructive Insects and Pests Acts, 1877 and 1907, for the purpose of preventing the spreading in Ireland of American Gooseberry Mildew and Black Currant Mite. The injurious results of these diseases and their highly infectious nature are explained in the Department's leaflets Nos. 47 and 76, copies of which are enclosed.

It will be observed that, under the Order, fruit growers may be required to destroy gooseberry bushes affected with American Gooseberry Mildew, as well as black currant bushes affected with Black Currant Mite. When the disease known as American Gooseberry Mildew was first dealt with by the Department, the spraying and pruning of diseased bushes was in some instances permitted as an experiment, to ascertain whether such treatment would succeed in controlling the disease. Having regard to the results of the experiments so far carried out, and to the information at the disposal of their Plant Disease Division, the Department are of opinion that the only effective method of preventing the spread of the disease in Ireland is to have the bushes destroyed. Similarly, the destruction of infected bushes has also been found to be the only satisfactory means of dealing with Black Currant Mite. Consequently, the usual procedure is to serve a Notice on the occupier of the premises on which diseased bushes are found, requiring him to have the bushes uprooted and burned. As the spores of American Gooseberry Mildew are borne not only on the leaves and stems of gooseberry bushes, but also on the fruit, it is necessary to prohibit the marketing of any berries from diseased bushes.

Applications for compensation have recently been received from fruit growers whose bushes or fruit have had to be destroyed in pursuance of Notices under the Order. A memorandum referring to the Sections in the Act dealing with payment of compensation is enclosed, from which it will be observed that the Acts provide for the payment of compensation out of the local rate. The Department are advised that these payments are to be borne on the general county rates and not on the special rate struck for the purposes of the Agricultural and Technical Instruction Act of 1899. It will be noted that while the order directing payment of compensation is to be made by the Department, Section I. (1) of the Destructive Insects and Pests Act of 1907 declares in effect that such an order shall not be made without the consent of the County Council, who are now the local authority for the purposes of the Act. Should the

County Council be willing that an order of the nature referred to should be made by the Department it is suggested that a resolution to that effect should be adopted by the County Council and that a sealed copy should be forwarded to the Department.

Should there be any additional information which the Department may be able to afford and which would assist the Council in coming to a decision on this matter the Department will be glad to furnish it if so requested.—I am, etc.,

T. P. GILL, *Secretary.*

To the Secretary of each County Council in Ireland.

MEMORANDUM ENCLOSED WITH FOREGOING LETTER.

With reference to Sections 3, 4, and 7 of the Destructive Insects Act, 1877, and to Section 1 Sub-section 1 of the Destructive Insects and Pests Act, 1907.

It will be observed that Section 3 of the Destructive Insects Act of 1877 empowered the Lord Lieutenant in Council to direct the payment by a local authority of compensation for crops removed or destroyed in compliance with any Order made under that Act. Under the provisions of Section 2, Sub-section 1 (b) of the Agriculture and Technical Instruction Act, 1899, the powers of the Lord Lieutenant in Council under the Destructive Insects Act, 1877, have been transferred to the Department. Section 7, Sub-section 2 of the Destructive Insects Act, 1877, provided that the local authorities "shall be the Boards of Guardians of the several Poor Law Unions." Section 6 (b) of the Local Government (Ireland) Act, 1898, however, transferred to the Council of each County "the business of the Guardians as Local Authorities under the Destructive Insects Act, 1877." Section 4 of the 1877 Act provided that "the expenses incurred and compensation paid by a local authority (i.e., a County Council), in pursuance of any Order under this Act shall be paid by them out of the local rate." Section 1 (1) of the Destructive Insects and Pests Act, 1907, provided that orders may be made for the preventing of spreading of any insect, fungus or other pest destructive to agricultural or horticultural crops or to trees or bushes. This Act did not make any alteration as regards the authority by whom compensation should be paid, but provided that the Department should not make an Order directing the payment of compensation except with the consent of the local authority (i.e., of the County Council).

As regards the basis on which the amount payable in compensation is to be calculated, attention is directed in particular to Section 3 of the Act of 1877. The Department are advised that for the purposes of calculating compensation payable for gooseberry and black currant bushes destroyed in compliance with an Order made under the Act the "value of the crop" may be interpreted as meaning the value which the bushes, if unaffected with the disease, would have had at the time of their removal or destruction.

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(2) FURTHER LETTER TO COUNTY COUNCILS.

DEPARTMENT OF AGRICULTURE AND
TECHNICAL INSTRUCTION FOR IRELAND,
UPPER MERRION STREET,
DUBLIN, *9th December*, 1914.

No. A. 25596–14.

Destructive Insects and Pests Acts, 1877 *and* 1907.

SIR,—Adverting to the Department's letter (No. A 11746–14) of the 10th August last, I have to acquaint you, for the information of your Council, that the Department's advice has been sought as to the procedure which County Councils should adopt in the event of their consenting to grant compensation for gooseberry bushes destroyed in compliance with Notices served under the American Gooseberry Mildew and Black Currant Mite (Ireland) Order, 1912. I have accordingly to forward for the consideration of your Council the accompanying memorandum on the subject. So far as the memorandum relates to matters of administration, however, it should be clearly understood that it is for the County Council to decide on their own discretion whether or not they will adopt the suggestions submitted.

Some County Councils, who have been considering the matter of compensation and who desired to ascertain approximately the probable charge on the rates, have asked the Department to verify the numbers of bushes stated by claimants to have been destroyed. The Department will be prepared to do so as far as possible, but they cannot undertake that their officers will be in a position to apply any check to claims made in respect of bushes destroyed prior to 1st September, 1913, or to advise as to the quality of bushes destroyed before that date.—I am, etc.,

T. P. GILL, *Secretary.*

The Secretary of each County Council in Ireland.

MEMORANDUM REFERRED TO IN PRECEDING LETTER.

Procedure suggested for adoption by County Councils who consent to the granting of compensation for gooseberry bushes destroyed under the Destructive Insects and Pests Acts, 1877 and 1907.

(1) Before fixing the scale of compensation for any particular year the County Council should have before them all the claims to be paid in that year. (This will enable the County Council to fix the total cost for the year.) At the same time the County Council should consider whether the delay involved in payment of compensation would inflict any undue hardship on claimants. In this connection the Department are advised that subject to Section 3 (5) of the Act of 1877, no discrimination is permissible as to the class of person to whom compensation should be granted, e.g., it is not lawful to grant compensation to claimants who derive their livelihood in part or whole from fruit-growing, or the valuations of whose holdings do not exceed a limit to be fixed by the County Council, and at the same time to refuse it in the case of other persons whose bushes were destroyed.

(2) The County Council should thereupon fix a scale for that year as follows:—

(a) For the best cultivated and most profitable bushes £....per bush.
(b) For less well-cultivated or less profitable bushes £.... ,,
(c) For inferior bushes, but of some value . . £.... ,,

The Inspector on whose report the notice was issued requiring the destruction of the bushes will be able to advise the County Council as to the quality of the bushes. As regards the rate per bush, the County Council may fix any sum not exceeding one-half the value of the bush if diseased, or three-fourths if healthy. In fixing the rate the value of the bushes to the owner should be taken into account and for this purpose in the case of fruit growers regard may be had to the income which they would have continued to derive from the bushes if the latter were healthy and had not been destroyed.

(3) The County Council should decide whether compensation should be granted in money or in supplying claimants with other plants. (It should be borne in mind, of course, that it is not advisable in view of the risk of infection remaining in the ground to replant it with gooseberry bushes.)

(4) The County Council should adopt a resolution in the form set forth in the attached draft. (A sealed copy of this resolution should be forwarded to the Department, who on receipt of same will make an Order authorising payment of compensation.)

DRAFT COPY OF RESOLUTION TO BE ADOPTED BY A COUNTY COUNCIL DESIRING TO GRANT COMPENSATION.

The County Council of County hereby consent to the Department of Agriculture and Technical Instruction for Ireland making an Order authorising the payment of compensation by the County Council for gooseberry bushes destroyed in compliance with Notices served under the American Gooseberry Mildew and Black Currant Mite (Ireland) Order, 1912, to such amount or amounts (not exceeding the maximum limits prescribed in Section 3 of the Destructive Insects Act, 1877), as the County Council may think fit, and in such cases only and subject to such conditions as the County Council may prescribe.

APPENDIX XIX.

POSTER *RE* BLACK SCAB IN POTATOES.

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

POTATOES.

WARNING.

Any person contravening the BLACK SCAB IN POTATOES (SPECIAL AREA—IRELAND) ORDER, 1913, is liable to a PENALTY not exceeding £10.

Copies of the Order may be obtained from the Department's Inspector, Killkeel; or from the Secretary, Department of Agriculture and Technical Instruction, 4 Upper Merrion Street, Dublin.

Wt. 16486—S 60. 1,000. 7/15. B. & N., Ltd